

COUNTWAY LIBRARY



HC 3JBB P

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

THE JOURNAL

of

The Medical Association of the State of Alabama

Vol. 17, No. 1
\$3.00 per Annum, 25c per Copy

July 1947

Published Monthly in Montgomery
at 519 Dexter Avenue

CONTENTS

Thiouracil and Propyl-Thiouracil. Earle Drennen, M. D., and S. A. Kahn, M. D., Birmingham	1	State Department of Health	17
Gynecologic Mortality. A Clinicopathological Analysis of 38 Cases. Thomas D. Efstation, M. D., and Henry Hyslop, M. D., Birmingham	4	Birth of Public Health Nursing	17
Procedure in Diagnosis of Anorectal Disease. W. J. Rosser, M. D., Birmingham	9	Specimens Examined	19
Editorials	14	Current Morbidity Statistics	20
Dr. Noland Honored	14	Trends in General Sanitation	20
Penicillin in Scarlet Fever	14	Book Abstracts and Reviews	21
Notice to Indiana Licensees	15	Roster of the Association	23
Call on Some Doctors, Son	15	By Counties	23
		Index of Members	52
		Index of Nonmembers	64

Entered as second-class matter July 9, 1931 at the post-office at Montgomery, Alabama, under the Act of March 3, 1879

BACKGROUND

OVER THREE DECADES OF CLINICAL EXPERIENCE

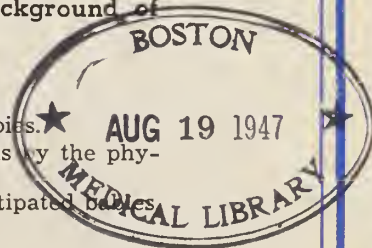
THE use of cow's milk, water and carbohydrate mixtures represents the one system of infant feeding that consistently, for over three decades, has received universal pediatric recognition. No carbohydrate employed in this system of infant feeding enjoys so rich and enduring a background of authoritative clinical experience as Dextri-Maltose.

DEXTRI-MALTOSE No. 1 (with 2% sodium chloride), for normal babies.
DEXTRI-MALTOSE No. 2 (plain, salt free), permits salt modifications by the physician.
DEXTRI-MALTOSE No. 3 (with 3% potassium bicarbonate), for constipated babies.

THESE PRODUCTS ARE HYPO-ALLERGENIC.

DEXTRI-MALTOSE

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized person
Mead Johnson & Company, Evansville, Ind, U.S.A.



SYMBOLS OF SIGNIFICANCE

A freer life--a fuller life

DILANTIN SODIUM



THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

July 1947

No. 1

THIOURACIL AND PROPYL-THIOURACIL

EARLE DRENNEN, M. D.

and

S. A. KAHN, M. D.

Birmingham, Alabama

Thiouracil has now been available to the general profession for more than a year. Prior to that time it had been furnished to special investigators for about eighteen months in order that they might determine its clinical value.

Dr. Edwin B. Astwood and his associates have been working for a still longer time on the problem of hyperthyroidism, and it is to Dr. Astwood that we owe the credit for these wonderful new drugs.

The clinical investigation has been under the direction of Dr. Stanton M. Hardy, of Lederle Laboratories, who has furnished both the thiouracil and propyl-thiouracil.

Thiouracil proved to be ideal in bringing the metabolism of hyperthyroid cases to normal. It is equally effective in both the nodular and the diffuse toxic cases. However, it is a dangerous drug. More than fourteen deaths were reported in the literature. The most serious complication was agranulocytosis. Other complications were septic sore throat, drug fever, swollen joints, skin rashes and leucopenia.

Dr. Astwood set about to formulate another thiouracil-type drug which would be effective but at the same time would be free from the dangers and complications of thiouracil. Thiobarbital was produced but caused nearly three times as many complications as thiouracil and had to be abandoned. Then, 6-propyl-thiouracil was elaborated and for the past year has been tested out on a fairly large scale, still under the di-

rection of Dr. Hardy of the Lederle Laboratories.

We treated about seventy-five toxic cases, all of them with basal metabolisms above plus 20, with thiouracil and had exceedingly good results on the whole. To date, we have employed propyl-thiouracil in 40 cases, 35 of whom have come to operation. There have been practically no complications of any kind. Other writers have reported transient skin rashes and a few cases of leucopenia. One case of agranulocytosis has been reported but cured by large doses of penicillin.

We have been fortunate enough in our small series to have had no complications at all; but, in spite of this, we continue to take all precautions, particularly watching the leukocytes and the percentage of polymorphonuclears.

In the cases that come from a distance, we see them every two weeks for a basal test, blood and urine checks. In the weeks between, these patients have their blood and urine checked at home or in a nearby town where a competent laboratory is available. If the white blood count falls below 4,000 or the polymorphonuclears below 45%, the drug should be stopped temporarily. They are also warned to stop the drug in case of sore throat with fever.

With thiouracil, the patients who developed drug fever were unable to resume the drug. In the cases with thiouracil where agranulocytosis has occurred, it has been

cured by giving as much as a million units of penicillin daily until the patient was out of danger.

The fall of the metabolic rate under propyl-thiouracil is about at the same rate as seen with thiouracil, namely, one point daily. In other words, a patient with a basal rate of plus 50 will require approximately fifty days' preparation before coming to the operation table.

Can toxic goiter be cured with thiouracil or propyl-thiouracil? The answer in the present state of our knowledge is that it is undetermined and doubtful. If continued too long, the treatment may result in myxedema. However, in most cases the gland usually becomes active again as soon as the drug is stopped.

Propyl-thiouracil is apparently so little dangerous that selected cases can be treated medically over a long period. We have in mind now a college student who has a toxic goiter and who is taking small doses

of propyl-thiouracil in order to finish the semester, when he plans to have the operation. Recently, cases of toxic goiter treated with these drugs have been reported as remaining well for two years after cessation of all medication. The basal metabolism was reduced to zero and then kept between minus 15 and zero for three months. After this no further treatment was given.

Treatment of toxic goiter with intravenous radiated iodine is still in an experimental state, although reliable hands have reported a few brilliant results. Certainly nodular goiters should be removed surgically and never treated medically. It is in the nodular type that malignancy develops, never in the diffuse or primary hyperthyroid cases. Although thiouracil and propyl-thiouracil are goitrogenic agents, no case of malignancy has been reported in connection with their use.

We have never tried to cure medically any cases of hyperthyroidism with these

Summary of 284 Individual Case Reports of Patients Treated With Propyl-Thiouracil, Compared With 513 Treated With Thiouracil

Report by Dr. Stanton M. Hardy, Lederle Laboratories, March 1947 (Not Previously Reported or Included in Published Summaries)

	Probacil (Propyl- Thiouracil)	Per Cent of Total	Deracil (Thiouracil)
Total patients treated	284		513
Number treated for hyperthyroidism	266		
Improved	238	89.3%	84.4%
Unimproved	28	10.7%	14.2%
Deaths	0		
Number treated for angina pectoris, etc.	18		
Improved	16		
Unimproved	2		
Deaths	0		
*Number of patients showing toxic side effects in total series	17	5.9%	20.3%
Number of patients in which administration of drug was discontinued because of toxic reaction	4	1.4%	10.1%
Types and frequency of toxic reactions:			
Leucopenia	8	2.8%	6.2%
(Drug discontinued)	3		
Skin rash	4	1.4%	2.9%
Nausea, gastro-intestinal upset	3	1.05%	3.7%
(Drug discontinued)	1		
Vertigo	2	0.7%	1.1%
Sore throat	2	0.7%	
Fever	1	0.35%	3.5%
Edema	1	0.35%	

Average daily dose Probacil received by patient in whom drug was considered a failure 0.1125 Gm.

Average duration of treatment of patients with Probacil in whom drug was considered a failure 56 days

It may be concluded that initial daily doses of less than 125 mgm. are likely to prove ineffective

and that treatment should be continued for at least sixty days before concluding that Probacil has proven a failure in any given case.

*Dr. Elmer Bartels has reported one non-fatal case of agranulocytosis which he attributed to Probacil (not included in this series).

drugs. And the toxic cases with a basal metabolism below plus 20 have been prepared with iodine. Toxic cases prepared with propyl-thiouracil or thiouracil should not be operated upon when the basal metabolism goes much below normal. Patients with incipient myxedema are extremely sensitive to morphine. The vocal cords also become thick and edematous in myxedema. In these cases it is best to postpone the operation until the basal metabolism has again become normal. Also in the aged, the debilitated, and patients who have lost large amounts of weight, it is better to take literally months in preparing them. While the metabolism may be brought down to normal in a few weeks, still it takes months in these cases to rehabilitate the whole body.

A summary of 284 individual case reports of patients treated with propyl-thiouracil, compared with 513 cases treated with thiouracil, has been presented by Dr. Hardy, and a copy of his report is herewith included.

Of our 40 cases, all 35 who have been operated upon have come through safely and practically without reaction. In preparing these cases for operation, we begin Lugol's solution, ten drops three times a day, three weeks before the date of operation. This is continued for ten days, along with the propyl-thiouracil, and the last ten days before operation the patient is taking only Lugol's solution.

When propyl-thiouracil was first available, we were advised to use not more than 75 mgms. daily. This proved wholly inadequate and most cases required 200 mgms. daily. The standard dosage for diffuse toxic cases has been established at 200 mgms. daily; for the nodular toxic 300 mgms. daily, given in two doses. In a few cases, dosage of 150 mgms. has been sufficient.

In our series, the cases of nodular and diffuse toxic goiter were equal in number. The average age of the diffuse type was 39 and the nodular 43. Average basal metabolism of the whole group was plus 32. The average time taken to prepare for operation was greater in the nodular goiters. Also, the larger the gland, the longer the time required. In some cases the preparation was interrupted by intercurrent disease, such as in-

fluenza and pneumonia. Another patient was alcoholic and his drinking bouts prolonged the preparation.

The oldest patient operated on in this series was 71 years of age. She had a large nodular goiter in the neck and an even larger substernal one.

CONCLUSIONS

1. Propyl-thiouracil is of great value in preparing selected cases of hyperthyroidism for operation.

2. Propyl-thiouracil is much safer than thiouracil, complications being mild and fewer.

3. Patients prepared for operation with propyl-thiouracil should take iodine in proper dosage for three weeks prior to operation.

4. Severe cases of hyperthyroidism properly prepared with propyl-thiouracil can be safely operated upon in one stage, thus obviating multiple operations, with their attendant inconveniences and expense.

Treatment of Asthma—The specific treatment of bronchial asthma consists of eradication of the cause, allergic, infectious or both as the case may be. When eradication is impossible or inadvisable, separation of the patient from the specific allergic causes, or immunization to them, is indicated. To arrive at the primary cause of bronchial asthma requires a careful and complete investigation, using not only skin tests, valuable as they are, but also keen perceptive powers and a scrutinizing physical examination which must be complete and thorough. This point is stressed most strongly.

Operative procedures on the paranasal sinuses for accompanying sinusitis should be performed only if strong indication exists for operation. Where pansinusitis exists, the infection and infective process should be removed, but extreme care should be taken in assuring a patient that this will be an end to his attacks. All too often such promises are unfulfilled. The advent of penicillin aerosol therapy in paranasal sinusitis represents an advance that at this time appears impressive in clearing up many cases of infectious sinusitis and consequent attacks of asthma.

The psychological effects of bronchial asthma on an individual should not be ignored, but instead studied and corrected in order to decrease the severity of attacks and the frequency of them.

For acute attacks of asthma nothing surpasses epinephrine 1-1000 subcutaneously. In prolonged attacks epinephrine may be repeated, and, in addition, such drugs as aminophylline intravenously or rectally, helium and oxygen by inhalation, and 50 cc. of 50 per cent glucose intravenously are helpful.—Harris. *California Medicine*, June '47.

GYNECOLOGIC MORTALITY

A CLINICOPATHOLOGICAL ANALYSIS OF 38 CASES

THOMAS D. EFSTATION, M. D.

and

HENRY HYSLOP, M. D.

Birmingham, Alabama

This paper presents a clinicopathological review of 38 gynecologic deaths in the gynecologic service at the Jefferson-Hillman Hospital from January 1, 1945 to January 1, 1947. Cases were obtained from both charity and private services. The private service has been essentially an "open" service, with patients under the care of both gynecologists and general surgeons.

A review of deaths is of great value to the personnel of an institution, and it indicates which gynecologic conditions have most grave prognosis.

During the two-year interval there were 3,577 admissions to the gynecologic service. Of these, 38 deaths occurred, giving a mortality rate of 1.07 per cent. Seventeen of the 38 deaths or 44.7 per cent came to autopsy.

MORTALITY CLASSIFICATION

For the purpose of analysis, we have divided the mortalities into two main groups as shown in Tables I, II, and III.

TABLE I

Nonoperative deaths	27
Postoperative deaths	11
Total	38

TABLE II

NONOPERATIVE DEATHS

	Total Deaths	Autopsies	Charity	Private
Tumors				
Ovary	7	3	6	1
Cervix	6	5	5	1
Inflammations				
Septic abortions	6	5	6	0
Pelvic inflammatory disease	5	2	5	0
Undetermined	3	0	3	0

From the Departments of Pathology and Gynecology of the Jefferson-Hillman Hospital and The Medical College of Alabama.

TABLE III
POSTOPERATIVE DEATHS

	Total Deaths	Autopsies	Charity	Private
Generalized peritonitis	3	1	2	1
Pulmonary lesions	2	0	2	0
Postanesthetic	2	0	1	1
Evisceration with shock	1	0	1	0
Cardiac failure	1	0	0	1
Shock	1	0	0	1
Surgical accident	1	1	0	1

NONOPERATIVE DEATHS

This group consisted of 27 cases of which 15 were autopsied.

Tumors of the Ovary:

There were seven cases, three of which came to autopsy. Four occurred in colored and three in white patients. The ages ranged from 35 to 70 years, with a mean age of 54.5 years.

Clinical diagnosis on all seven was adenocarcinoma of the ovary (two on the right, four on the left, and one bilateral), with generalized carcinomatosis. The duration of symptoms from onset to death ranged from 4.5 years to one month. The salient symptoms were swelling of the abdomen, abdominal tenderness, masses in the pelvis and abdomen, anorexia, loss of weight, constipation, and vaginal bleeding. Physical examinations were consistent with the symptoms in that all showed ascites and masses in the abdomen, cul-de-sac and pelvis. Inguinal lymph nodes were palpable in four. Biopsy of one was performed, and the section revealed adenocarcinoma.

Exploratory laparotomies were performed in three cases. Extensions to the peritoneum and abdominal organs were noted. Adenocarcinoma of the ovary was the microscopic diagnosis in each case, following removal of tissue at operation.

Two cases had repeated paracenteses at intervals of thirty days. Malignant cells

were found in the removed fluid, and were reported to be "of undetermined type."

Of the three cases which came to autopsy, two had pseudomucinous cystadenocarcinoma of the right ovary. One of these had metastasized to the left ovary. All had generalized carcinomatosis involving the organs of the abdomen, the peritoneum, and pleural surfaces of both lungs. One case had bilateral chronic hydronephrosis and pyelonephritis as a result of obstruction to both ureters in the pelvis.

Therapy in these cases was mainly supportive and palliative. They were all seen at their terminal phase. Any previous treatment by roentgenotherapy or radium was not known.

Carcinomatosis was the common terminal phase in all cases. A review of the literature shows that metastases to the lymphatic glands are noted early, of which the lumbar group are usually first involved, followed by the retroperitoneal group. The inguinal and mediastinal groups are usually involved in generalized carcinomatosis. The distant organs involved in our cases were the liver, pancreas, gastrointestinal tract, lungs, and pleura.

Tumors of the Cervix:

Six deaths were due to carcinoma of the cervix. Four were in colored and two in white women. The ages ranged between 37 and 68 years with a mean age of 49.3 years.

The initial presenting symptoms in all were pain, profuse vaginal bleeding, and loss of weight. One complained of menorrhagia; and three of incontinence, frequency, and urgency. On pelvic examination, one case was in Stage I (Schmidt's classification), two in Stage III and two in Stage IV. No record of pelvic examination was found in one case.

Biopsy reports five as squamous cell carcinoma, of which one was Grade II, three Grade III, and one intermediate. One case was reported as adenocarcinoma of the cervix.

The five cases autopsied presented characteristic patterns differing only in extent of involvement. The case of adenocarcinoma had marked generalized carcinomatosis with metastasis to the abdominal organs, diaphragm, peritoneum, and the lungs. Metastases were present in the aortic, retroperitoneal, and inguinal lymph nodes.

There was also a right hydro-ureter and hydronephrosis due to obstruction to the right ureter in its lower course. Four cases of squamous cell carcinoma of the cervix had severe destruction of the cervix with extension to the surrounding tissues. Three showed obstruction of the ureters by tumor, causing bilateral hydro-ureters and hydronephrosis. Three cases had fistulae, two rectovaginal and one vesicovaginal. The latter four cases differed from the case of adenocarcinoma in that there was no metastasis outside of the pelvis.

Pearson and Garcia¹ reviewed 57 deaths due to carcinoma of the cervix, and they reported 60.3 per cent had bilateral parametrial spread while 10.3 per cent had unilateral parametrial spread. Of Pearson's² cases, 65 per cent had bilateral ureteral stricture, and 10.5 per cent had unilateral ureteral stricture. In our series 80 per cent had bilateral ureteral stricture with resultant hydro-ureter and hydronephrosis. This complication can readily be explained anatomically by the close proximity of the ureters to the cervix in their lower course to the bladder.

Williams³ reported an incidence of vesicovaginal fistula of 34 per cent. Pearson² however, showed an incidence of rectovaginal fistula of 17.3 per cent and of vesicovaginal fistula of 8.3 per cent. In our series the incidence of rectovaginal fistula was 40 per cent and vesicovaginal fistula 20 per cent.

Of the cases presented, only one sought medical advice prior to one year after the onset of symptoms. The other five were seen from one to ten months prior to death. When first seen, all were in poor physical state and the malignancy was beyond curative therapy. The treatment was symptomatic and palliative, chiefly directed to the relief of pain and control of hemorrhage.

The immediate causes of death were massive hemorrhage in one case, terminal pneumonia and uremia in three cases, and generalized toxemia in two cases.

Septic Abortions:

This group consisted of six cases, four colored and two white. The age range was 13 to 36 years, with a mean age of 25 years. Five of the cases came to autopsy.

All of these abortions occurred during the first trimester of pregnancy, five being spontaneous and one criminally induced. Two of the spontaneous abortions had post-abortual instrumentation in the home.

The clinical picture was similar in all six cases. All gave a history of vaginal bleeding, pain in the lower abdomen, fever, and chills. The physical findings consisted of high fever, tenderness and rigidity in the lower abdomen, vaginal bleeding, and a generalized state of toxemia.

All ran a septic course and were completely refractory to treatment with sulfonamides, penicillin, blood transfusions, intravenous fluids, and other supportive measures. Treatment was adequate in all cases.

The five cases autopsied presented a diffusely spread septic picture. Chronic endometritis with myometritis was found in all. Three had thrombophlebitis of the uterine veins and bilateral salpingo-oophoritis. Four had generalized purulent peritonitis with multiple abscesses in the abdominal organs. Acute splenic tumor with fatty changes in the liver was noted in two cases. Pulmonary findings, in all cases, consisted of congestion, lobular pneumonia, multiple abscesses, septic infarcts, and serofibrinous pleurisy. Acute bacterial endocarditis due to *Staphylococcus aureus* was present in one case. This case also had multiple abscesses in all the thoracic and abdominal organs. One case developed terminally edema of the glottis.

Causes of death were attributed to generalized peritonitis with multiple abscesses in four cases, edema of the glottis in one, and pneumonia in one.

Pathologically, puerperal infection may cause an infinite series of gradations from a mild localized inflammation to an inflammatory process involving the entire generative tract. This may extend beyond to the parametrium or peritoneum leading finally to a systemic infection. The infectious process spreads via the lymphatics and rarely by direct extension. Thrombophlebitis of the veins of the uterus, tubes, ovaries, and internal iliacs are not uncommon complications. The widespread abscesses outside of the pelvis usually occur from small septic emboli breaking away from thrombosed vessels in the pelvis. In the review of our cases, we have noted that the extension of

the inflammatory process, within and outside the pelvis, had occurred in the manner described above.

Clinically, in spite of present therapy against infection, there are still numerous cases which do not respond to treatment. Our mortality rate was 1.21 per cent of 489 admissions for septic abortion.

Pelvic Inflammatory Disease:

There were 143 admissions with five deaths giving a 3.4 per cent mortality rate. All five deaths occurred in colored patients whose ages ranged from 20 to 44 years, with a mean age of 31.6. Only two came to autopsy.

Two cases had a final clinical diagnosis of pelvic abscess with possible tuberculous peritonitis. The clinical picture in both was that of a low grade pelvic peritonitis with a "frozen pelvis," in addition to hemoptysis. X-ray of the chest and Mantoux test were negative in both. Laparotomy for drainage of a pelvic abscess was performed in one, at which time a mesenteric lymph node was biopsied which was later reported to be caseous lymphadenitis, probably of tuberculous origin.

Two cases were admitted presenting all the symptoms and signs of a severe pelvic cellulitis and peritonitis. One, in addition, had a large pelvic abscess in the left which extended to the umbilicus. This abscess ruptured spontaneously into the peritoneal cavity on the 11th hospital day. Autopsy confirmed clinical findings and diagnosis. The second case expired on the third hospital day and no autopsy was permitted.

The fifth case presented a very interesting clinicopathological picture in which the apparent source of infection was an abscess of the gluteal region with drainage into the pelvic cavity.

This patient gave a history of intramuscular gluteal injections one year prior to admission. Following these injections she developed draining sinuses in the right hip which progressively grew worse. On admission the picture was that of a right gluteal abscess accompanied by a severe pelvic peritonitis and abscess formation. Autopsy revealed a dense pelvic fibrosis involving the ureters and bladder, suppurative pelvic and peripelvic inflammation, bilateral thrombosis of the external iliac and femoral

veins, purulent pyelonephritis bilaterally, and lobular pneumonia.

The pathologic process apparently originated extraperitoneally in the gluteal muscles, with drainage externally and into the pelvic cavity.

In all cases treatment was adequate. Death was due to uremia and pneumonia in one case and to generalized bacterial toxemia in four cases.

Undetermined:

These consisted of three cases which could not be clinically classified in any of the forementioned groups. None came to autopsy.

Two cases gave a history of chronic vaginal bleeding over a period of 30 and 90 days, respectively, and on admission were in surgical shock. One case expired 48 hours following admission due to shock. This case was not adequately treated, for only 500 cc. of plasma and 1000 cc. of 5 per cent glucose were given 48 hours. The record, however, states that no blood was obtainable. The second case expired on the seventeenth hospital day while in the process of receiving a blood transfusion. This case received adequate therapy. Her death, however, can be attributed to transfusion reaction. In neither of the above cases was the etiology of the vaginal bleeding determined.

The third case was a 72 year old colored female who was admitted in extremis with urinary retention. Examination revealed an ulcerative lesion of the vagina, not involving the cervix, which extended to the urethra causing obstruction. Biopsy of the vaginal lesion was reported as probable squamous cell carcinoma. Treatment was merely supportive and consisted of relief of urinary retention and sedation. She expired on the second hospital day, and death was attributed to generalized toxemia due to carcinomatosis and urinary retention.

POSTOPERATIVE DEATHS

This group consisted of 11 cases of which two came to autopsy. Deaths were attributed to surgical procedures and postoperative complications. Table III.

The surgical procedures were as follows:

1. Total abdominal hysterectomy 8 cases
2. Salpingo-oophorectomy for tubo-ovarian abscesses 2 cases
3. Vaginal hysterectomy 1 case

Generalized Peritonitis:

Three cases developed generalized postoperative peritonitis. The average age was 35 years. Two had total hysterectomies for fibromyomata uteri, while the third had a right salpingo-oophorectomy for a tubo-ovarian abscess.

The two cases that had total hysterectomies developed morbidity immediately postoperatively and, in spite of adequate chemotherapy and supportive measures, expired on the fourth and sixth postoperative days. One of these cases was a mild diabetic who had received adequate treatment postoperatively. This case came to autopsy, at which time generalized fibrinous peritonitis, acute pelvic peritonitis, peritoneal hemorrhage, infected abdominal incision, purulent bronchitis, and atelectasis of the right lower lobe of the lung were found.

The third case had a salpingo-oophorectomy for tubo-ovarian abscess. During surgery this abscess was accidentally ruptured thus spilling pus into the peritoneal cavity. She was adequately treated without response and expired on the third postoperative day.

Pulmonary Complications:

Two cases developed postoperative pulmonary complications. One had a total hysterectomy for fibroid uterus, while the second had a vaginal hysterectomy for prolapsed uterus. Their ages were 36 and 33 respectively.

The first case developed atelectasis of the left lower lobe, probably on the basis of embolism, on the second postoperative day. This was followed by a pneumonitis, and the patient expired on the eighth postoperative day. The second case developed a typical pulmonary embolism on the twelfth postoperative day, three days after having been discharged from the hospital. Her postoperative course until discharge was uneventful. She was readmitted with a diagnosis of pulmonary embolism and expired twelve hours after admission. Treatment of this latter was mainly symptomatic as she was moribund when seen during the second admission.

Postanesthetic Deaths:

Two cases were classified as anesthetic deaths. However, death was not due to the

anesthetic agent. Both cases had sodium pentothal intravenously. The operative procedures were total abdominal hysterectomy in one and right salpingo-oophorectomy in the other.

Both deaths occurred in an identical manner. The patients left the operating room in good condition and were placed in bed. Due to the position of the patients in bed a clear airway was not assured, with an end result of respiratory embarrassment and death. Had there been more adequate nursing facilities during this time, when the war was still in progress, these fatalities might have been prevented.

Evisceration with Shock:

This 53 year old colored female had a total hysterectomy for fibromyomata uteri. On the sixth postoperative day she became delirious and got out of bed exerting herself excessively, eventually eviscerating. Secondary closure of the wound was performed, but the patient expired on the seventh postoperative day in shock. Black silk was used on fascia for the original closure, through and through silver wire for the secondary closure.

Cardiac Failure:

In this case a total hysterectomy was performed for massive fibromyomata uteri on a 44 year old colored female. This patient, in addition, had hypertensive heart disease. Preoperative preparation was adequate and she withstood the operative procedure well. On the fourth postoperative day, however, she went into cardiac failure, and did not respond to digitalization and supportive therapy. The patient expired on the eighth postoperative day.

Shock:

One patient expired as a result of surgical shock. She was a 30 year old colored female on whom a total hysterectomy was performed under pontocaine spinal anesthesia for vaginal bleeding. This patient expired ten hours postoperatively in shock.

Surgical Accident:

This 44 year old white female had a history of profuse vaginal bleeding of ten days duration. Biopsy report from the cervix was squamous cell carcinoma, Grade II. A total hysterectomy was performed. The patient had not voided by the fifth postopera-

tive day. A cystoscopic examination reported obstruction of both ureters at 7.5 cm. from the bladder. This patient died on the fourteenth postoperative day.

At autopsy squamous cell carcinoma of the cervix, Grade II, was found, together with ligation of both ureters, hydro-ureter and pyonephrosis bilaterally, acute pyelonephritis, generalized peritonitis with subdiaphragmatic abscess on the right, focal necrosis of the liver, and generalized anasarca.

SUMMARY

1. An analysis of 38 gynecologic deaths in a general hospital with a charity gynecologic service and with private practice has been presented.
2. Tumors were first in cause of nonoperative deaths, with the inflammatory group second. Carcinoma of the ovary caused more deaths than carcinoma of the cervix.
3. Carcinomatosis was present in all cases of tumor of the ovary and in the one case of adenocarcinoma of the cervix.
4. Five cases of squamous cell carcinoma of the cervix had local extension with no extrapelvic metastasis.
5. The group with pelvic inflammatory disease had a higher mortality rate (3.4 per cent) than the group with septic abortion (1.21 per cent).
6. Widespread infection beyond the pelvis was prominent in the cases of septic abortion.
7. A peculiar case of pelvic and peripelvic fibrosis following intramuscular gluteal injections was of special interest.
8. The group listed as undetermined brings out the importance of postmortem examinations in establishing the cause of death.
9. Postoperative complications were: generalized peritonitis (3 cases), pulmonary lesions (2 cases), postanesthetic (2 cases), and one case each of evisceration with shock, cardiac failure, shock and surgical accident.

CONCLUSIONS

1. There is need for earlier diagnosis of pelvic cancer.
2. Pelvic inflammatory disease may be serious, causing death as frequently as septic abortion.
3. There is need of alertness postoperatively

to detect complications, and of speed in initiating treatment.

4. The percentage of autopsies performed in the undetermined and postoperative groups was relatively small. The information derived from postmortem examination is of great value to future clinical cases.

BIBLIOGRAPHY

1. Pearson, B. and Garcia, M.: Spread and

Metastasis in Carcinoma of Cervix Uteri; Their Significance in Planning Treatment. *New Orleans M. & S. J.* 95: 215-219, Nov. 1942.

2. Pearson, B: Factors in Cause of Death in Carcinoma of Cervix; Study of 57 Cases Coming to Necropsy. *American J. Cancer* 28: 31-39, Sept. 1936.

3. Williams, R.: *The Natural History of Cancer*, Baltimore, William Wood and Co., 1908.

PROCEDURE IN DIAGNOSIS OF ANORECTAL DISEASE

W. J. ROSSER, M. D.

Birmingham, Alabama

It is the purpose of this paper to outline suggestions for a satisfactory routine for the examination and diagnosis of anorectal disease. In the past, many diseases of this region of the body have gone undiagnosed and untreated due to two main factors. The first is the attitude of the patient with reference to these parts of the body, and the second is the attitude of the physician. This was truer prior to 25 years ago than it is today. It is still true in too great a measure in that it is difficult to convince some people that it is important to consult a physician at the first sign of any peculiarity or change of function of the bowel. Just why a physician should feel any reluctance in doing an examination of these parts cannot be explained. On the other hand, if the patient is backward about describing his symptoms, he should be encouraged by the physician, without asking leading questions, to describe them in detail.

For a long time, ailments of the anus and rectum have given the quack and charlatan an opportunity to ply their trade, and they have made the most of this opportunity. It is only by close and sympathetic physician-patient relationship that we can lessen or overcome the uncertainty and costly experiences resulting from such practices in the past.

Some of these people fear an examination because they, or some of their acquaintances, have had the unfortunate experience of falling into either unskilled or unsympathetic hands, and their fears are not unfounded. We should not wonder then that

they take what seems the easy way out and resort to the patent medicine that is guaranteed to dissolve their piles, stop their itching, or cure their constipation.

In order to do an anorectal examination properly, one must not only possess skill and experience but he must have the proper examining room equipment. The examining room itself should, of course, be clean. It should be bright and as free as possible from odors that would be offensive to the patient. It should be so arranged that the instruments to be used are within easy reach of the physician or assistant and concealed from the patient as much as possible. There is nothing about the appearance of a proctoscope to inspire confidence and courage in any patient, especially a patient that is inclined to be nervous.

Toilet facilities, either connected with or easily accessible to the examining room, although not indispensable, are very desirable. In our hands, giving a small enema just prior to the proctoscopic examination facilitates the examination and sometimes brings out anal protrusions that otherwise might be missed.

It does not seem necessary or desirable in a paper of this kind to name and describe every item of examining room equipment, but it would seem that the position of the patient for examination is important and for this reason the table is important. We prefer the Hanes and Buie tables because with them it is possible to place the patient in the inverted position so that the rectum and lower bowel can be better visualized.

On the first visit it is very important to obtain a good history. The patient should

be encouraged to state his complaint in his own words, guided tactfully by the physician. This is especially true of female patients who are probably now at the point they have most dreaded all along.

Probably the most frequent complaint that causes a person to seek the advice of the proctologist is pain. This is especially true if the lesion is between the anal margin and the anorectal line because here the tissues are liberally supplied with sensory nerve fibers. Above this line there are no sensory nerve fibers and pain is only caused if a growth or disease process involves surrounding structures. This is important with regard to malignant disease of the rectum, which may progress to a stage almost unbelievable without causing any serious discomfort. But it should be remembered that pain in the anal canal and at the anal margin is usually out of all proportion to the size of the lesion. The pain may be described as sharp, shooting in character and greatly increased by defecation, as seen in anal fissures or ulcer, malignant or non-malignant. The patient may describe it as throbbing in character, and more or less constant as you would expect to find in abscess; or it may be dull, aching, intermittent or constant, suggesting hemorrhoids, fistula, polyp or malignancy. He may possibly complain of pain in parts distant from the rectum, since pathologic processes in the anus or rectum may cause referred pain to the sacrum, bladder, vagina in the female, and in the penis in the male, or along the course of the sciatic nerve, or in the inguinal region. The duration of the pain should be ascertained, whether or not it has been becoming worse and whether it is intermittent or constant.

It should be carefully noted in the history whether or not there has been any bleeding. This history, above all others, makes a thorough proctologic examination mandatory. We make it a rule that if the patient does not voluntarily mention bleeding to specifically inquire about it. Usually, if there has been much bleeding, this will be the first thing he tells the doctor. But if pain has been the predominant symptom, sometimes in his enthusiasm to impress the physician with the importance of this he will neglect to mention a small amount of bleeding. If there has been bleeding it should be ascertained whether bright red, dark or clotted

blood and the amount, remembering that bright red, unclotted blood usually indicates bleeding from the anal canal, and the darker the blood, the higher the lesion usually. It should be asked if bleeding occurs on bowel movement only, and if it is mixed with mucus or pus or is mixed with feces.

A most important item in the history and one which may require considerable questioning on the part of the physician is that of any change in bowel habits. It is not sufficient merely to ask if the patient is constipated. Some people will tell you they are not constipated, and further questioning evokes this answer: "Doctor, I take some medicine every night to keep me from being constipated." It is not so much a question of how often a person has a bowel movement as it is a question of a change from what was once normal bowel habits. It is now pretty generally recognized that some people may normally have 2 and 3 evacuations a day, some once a day, some every other day or even weekly. Some primitive people go a week or two or even a month or two regularly without emptying the colon, and this is normal for them. So, then, we must question closely about a change in bowel habit. This includes diarrhea, constipation and the taking of laxatives.

Voluntary information will be given concerning any protrusions, if present, but if the information is not given, the question should be asked if there are any protrusions during bowel movements or at other times. Where a child is the patient, the mother will usually tell the physician that something comes out every time the child goes to stool and that she replaces it with her fingers. This is very suggestive of polyp and is usually confirmed on proctoscopic examination. In adults the most common protrusions are hypertrophied papillae, internal hemorrhoids, and prolapsed rectum. The latter may commonly occur in children also. If protrusion is present it should be ascertained if it occurs only on bowel movement, whether it can be replaced or remains outside, and if it is painful or bleeds.

A history of itching may accompany almost any pathologic process of the anorectum. If itching is present, inquiry should be made as to its duration, severity, and the time of day it is most severe. It should be ascertained if there is any discharge or

moisture present. A history of previous abscess with continued drainage and irritation and itching is suggestive of anal fistula. Frequent moisture at the anal outlet with resultant pruritis may be caused by infected crypts, hypertrophied papillae, anal ulcer or malignancy. A large percentage of pruritis ani is caused by some pathologic condition in this region, and when this condition is properly cleared up the itching stops. Certain other cases are due to diabetes or allergy and stop when these conditions are properly treated.

Any past rectal operations or treatments should be recorded. Before taking the patient in the examining room it is probably well to review the history with him and ask if anything has been omitted.

If the patient is a man, he is taken in the examining room and prepared for examination by the doctor. If a woman, she is prepared by the nurse or female attendant. This is done by having the patient remove outer clothing, after which she is put on the table in the inverted position by adjusting the table to the desired position. The patient is then draped with a sheet to avoid unnecessary exposure. In some cases, especially very sick patients or pregnant women, it is desirable to use the Sims position. A very satisfactory examination can be done in this position and some prefer it. During the entire procedure of placing the patient on the table and the examination he must be reassured. It is well to tell him beforehand that the head is going to be lowered and that he will feel a rush of blood to the head but that this is nothing to be alarmed about. We find it is valuable to invert the patient partially for the first part of the examination and later place him in extreme inversion for the proctoscopic examination.

The first part of the examination should be a thorough inspection of the peri-anal region, the anal margin and just inside the margin by gently pulling the margin apart. The patient should be asked if there are any tender areas. This will aid in the examination and at the same time reassure the patient. One should look for any protrusions, peri-anal masses or deformities, excoriations, discharge, blood, sinuses, etc.

Next is the digital examination. If there are painful lesions about the anal margin it is well to insert a cotton swab saturated

with 2% pontocaine solution into the anal canal and leave for a minute or two. It is impossible to do a thorough examination if the patient is constantly resisting the examination and crying out in pain. The digital examination is preliminary to the anoscopic or proctoscopic examination. By this means, it can be determined whether or not the anal canal will admit a proctoscope or anoscope and in determining the size scope to use. Due to pain, muscular spasm, or obstructive lesions, it may be necessary to stop the examination entirely and wait until the patient is hospitalized or some form of anesthesia is administered. A more thorough digital examination can be done with the patient in the Sims or lithotomy position when palpation can be done with one hand on the abdomen and the lubricated and gloved index finger in the rectum, and by asking the patient to bear down.

After the digital examination has been completed the patient can usually be assured that the remainder of the examination will be completed without too much discomfort. It is a good procedure to do the anoscopic examination next. This is done for the purpose of visualizing the structures of the anal canal. In order to do this, one third of the anal wall is inspected at a time, the scope being readjusted each time. In this way hemorrhoidal masses can best be seen at their right anterior, right posterior and left lateral positions. At the same time the crypts and papillae can be thoroughly inspected and any other pathology in the anal canal found.

Next in the order of examination is the proctoscopy. If the examiner has kept proper contact with the patient up to this point the proctoscopic examination should be completed without too much discomfort. The patient is now placed in extreme inversion and assured that the instrument now to be used is no larger than the one just used. The scope is well lubricated with a water soluble lubricant and firmly held in the hand in such a way as to prevent the obturator from slipping out, and gently but firmly pressed into the anal orifice and past the inner anal margin. Here the forward motion is stopped, the obturator withdrawn and the remainder of the proctoscopy done under direct observation. Negative pressure of air passing through the proctoscope now

causes the rectum to balloon out and, if it is not filled with fecal material, all the recesses can be visualized. It seems to be a good practice to give a plain warm water enema just before beginning the examination.

If the toilet facilities are not available the patient can be instructed to take an enema before coming to the office, being sure it has all been expelled before leaving home. The patient should now be told he will probably have a sensation of fullness and a desire to have an evacuation, but that this is due to the examination and that there is no need for alarm. As the scope is passed upward, the bowel wall, especially the valves, may be inspected. As the distal end of the proctoscope reaches or approaches the rectosigmoid, a thorough inspection can sometimes be done better if the bowel is somewhat ballooned by using the inflating bulb. A word of warning, however, should be given relative to inflation. If the examination is properly done, it will rarely have to be resorted to. It is most valuable in short, obese individuals and in those cases where the mucosa of the bowel appears to be more or less dry and stuck together and cannot be pushed aside and separated by gentle manipulation of the distal end of the proctoscope. Then, too, blowing air into the bowel usually increases the discomfort of the patient and may cause harm, and at the same time defeat the very purpose for which it was intended.

Inspection can be done better as the proctoscope is being withdrawn. As this is done, slowly, the mucosa should be carefully studied. If ulcers are found, specimens can be taken or biopsies done for microscopic study. All suspicious lesions should be biopsied. Care should be taken to inspect carefully the recesses and the areas behind the valves. Search should be made for polyps and other pathologic process. If indicated, a specimen of feces may be obtained for microscopic study.

When the examination is completed, the patient should be assisted off the table because after being in the inverted position for some time, he will probably be dizzy on assuming the upright position.

If the history and physical findings are such as to indicate it, the patient may now be sent for barium enema and x-ray studies of the colon. This should be done only after

the proctoscopic examination has been completed and should not be relied upon to take the place of the proctoscopic examination.

When a patient comes in complaining of some condition suggestive of anorectal pathology, his complaint should be given due consideration by the physician. In fact, no general physical examination is complete without a proctologic examination.

The examination should be done in such a manner as to make it as painless and as free from disagreeable conditions for the patient as possible, and at the same time visualize all possible pathology.

A CORRECTION

In Dr. S. W. Windham's contribution to the June Journal, his name and title should have appeared as follows: Samuel W. Windham, M. D., F. A. C. S. (Jr.).

Mobilization After Operation—Many factors, surgical and non-surgical, influence the movement of a patient in bed. The surgical factors, such as anesthesia, operative technic, parenteral fluids and intestinal suction, are not within the patient's control. The non-surgical factors, psychogenic and physical, are closely interrelated and interdependent, can be partially controlled, and will therefore be considered.

Psychogenic factors deal with the personality of the patient and his reaction to surgical procedure, both before and after operation, and many exert either a favorable or deleterious influence on the patient during convalescence. The surgeon may be able to modify these factors which are usually due to ignorance, fear, or the mistaken apprehension that the wound will be disrupted by motion in bed.

The value of immobilization as a therapeutic measure is deeply ingrained in the lay mind and all too often in the minds of the medical profession. It has been extolled and emphasized for so long that it is almost considered heresy to advise patients to move about in bed. The usual patient, although cautioned and instructed to breathe deeply and move frequently, fails to do so either because of personal inertia or the initial pain caused by the increase in abdominal tension, and movement of the abdominal muscles. Even if the patient has good intentions of moving about in bed and breathing deeply, he soon forgets the instructions or finds it difficult to move in the Fowler or semi-Fowler positions. Moreover, in each of these two positions it is almost impossible for the patient to turn on his side and maintain the position with comfort. The reverse-Trendelenberg position was first used to overcome this reluctance on the part of some patients, and forgetfulness on the part of others, to move about frequently and breathe deeply. The results were so satisfactory that it was soon used on most patients—*Mendelssohn, New Orleans M. & S. J., June '47.*

Treatment of Peptic Ulcer—The treatment of peptic ulcer should be managed in two phases: first, the lesion must be healed. The lesion of peptic ulcer is but the dangerous manifestation of the whole disorder. Second, the pathological background of the ulcerative process must be reconditioned. The disorientation of the secretions to physiologic demands is fundamental and constitutes the comprehensive character of the whole disease, rather than being the mere prodromata.

That the ulcer crater will disappear with the control of gastric acidity, and thereby the activity of pepsin, has been demonstrated roentgenologically through several decades. This is so conclusively proven that the use of antacid therapy along with any other agent, experimental or otherwise, vitiates the observations as to the efficacy of that agent. The most frequent recourse in treatment is to the Sippy diet and the Sippy powders. These were epochal advances in the management of peptic ulcer but were devised in the prerentgen era for the treatment of more advanced ulcer than the uncomplicated early ulcer which is most frequently recognized today. Neutralization remains the *sine qua non* of treatment in active ulceration and it may be accomplished with simple agents. A mixture of calcium carbonate, bismuth subcarbonate and soda bicarbonate, with the added calcined magnesia sufficient to bowel function, is fully effective. No alkalosis need be feared from this combination. Hyoscine in small dosage will be found serviceable and often superior to atropine as a vagus sedative. These drugs will not diminish mucous secretion. Neither an astringent property nor a coating effect is a needed characteristic of any antacid. The mucus which characterizes and names the mucous membranes is the natural provision against continued adherence of any foreign substance.

The diet of ulcer may be very liberal and normal. Without gastric motor impairment, only raw, sour and spiced foods need be eliminated. A dry diet rather than soups and other liquid foods will take up the gastric secretions more readily. A liberal diet will provide adequate nutriment in proper form. The very active and effective gastric secretions will most promptly hydrolyze the protein content, doubtless better than any "in vitro" process of hydrolysis. Hospital diets are too often arranged in a progression based upon the fear of trauma or distention and unrelated to the status of ulcer or to the adequacy of gastric motility. Intermediate feedings are useful during the healing of the lesion. This period will last from four to eight weeks. The comfort of the patient is no criterion of the extent of progress. But continued discomfort and pain or other symptoms are evidence of inadequacy. The facility with which comfort usually may be given the patient with uncomplicated ulcer is the great obstacle to ulcer management. The patient needs to understand the difference between the absence of pain and the actual cure by reversal of the chronicity factors for ulcer. With healing of the lesion, and this is more readily demonstrated with gastric than duodenal ulcer, the management of the patient should be changed to

the second phase of treatment to provide for reconditioning of the gastro-duodenal functions to the normal cyclic manner of digestion which leaves a quiescent inter-digestive period for recuperation and healing of the tissues. Intermediate feedings are now omitted and the antacid is discontinued and a dietetic regimen of three balanced meals is arranged with only water between meals.—*Larimore, South. M. J., July '47.*

Tuberculosis in Pediatric Practice—The hope of complete eradication of tuberculosis from the human race seems to rest squarely on the basis of its control by epidemiological means. Already great progress has been made in this direction. Bovine infections have been practically eliminated as a source of danger to infants and children. Protection of children from human infections is, of course, a far more difficult task, but the means are at hand awaiting application only to accomplish it. If a leaf could be borrowed from the methods employed by the veterinarians, the entire population of the nation would periodically be tested by tuberculin, the positive reactors would be x-rayed and studied for clinical disease, and those found to be contagious would be isolated and treated. While such an ideal program has little chance of immediate attainment, it can and is being approached. It is entirely practicable for physicians to provide their child patients with an immedaite environment which is safe from the risks of tuberculous infection. A chest roentgenogram or a tuberculin test should be as routine in the prenatal care of every woman as is the taking of a blood specimen for syphilis. A similar examination should be made of the members of a family, including domestic workers, of school teachers, and of physicians, nurses and other personnel of hospitals caring for children. Repetition of these precautionary measures every two or three years, together with testing of the children themselves with tuberculin at like intervals, constitutes the most effective prophylactic program for children available at the present time.

Further protection for the children of America is being secured by mass x-raying surveys of apparently healthy groups in industry, rural areas, high schools, colleges and other groups. These programs are usually carried on without preliminary tuberculin testing and have as their aim the detection of active or potentially active tuberculous lesions. Miniature films and rapid film taking methods make it possible to examine large numbers of persons quickly and economically.

Unfortunately, no specific form of drug or serum therapy has been developed for tuberculosis. The sulfonamide chemicals apparently are not effective against the tubercle bacillus. Streptomycin is still in the experimental stage. However, it offers the most promise of any of the newer chemicals so far brought forward.

Rest, diet, healthful living conditions, and time are the general measures to be depended upon for bringing about healing in most of the tuberculous lesions.—*Hill, Journal-Lancet, June '47.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham

C. E. ABBOTT Tuscaloosa

JOHN L. BRANCH Montgomery

D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

July 1947

DR. NOLAND HONORED

At a reunion of the medical staff of the Employees Hospital (Fairfield) of the Tennessee Coal, Iron & Railroad Company in Birmingham, May 16, more than half of the 248 interns who have worked with Dr. Lloyd Noland, Birmingham, at the hospital returned to pay him honor on completion of thirty-four years' service with the company. Part of the ceremony was in the nature of a surprise party in that Dr. Noland's six brothers and sisters, who had not been together for many years, were present. A book was presented to him, also as a surprise, containing a list of the interns and staff members with whom he had served throughout the years, and a number of medical papers published for the first time by eminent authorities. The book, which also contained a biography, had been prepared by a committee headed by Drs. E. Bryce Robinson, Jr., Hillary H. Henderson, Jr., Wallace A. Clyde and Russell G. Hightower, all of Fairfield. Dr. Noland came to Birmingham from the Panama Canal Zone, where he had been an assistant to General William C. Gorgas. He founded the three and half million dollar Tennessee Coal and Iron hospital. His experience in the tropics has enabled him to reduce greatly the number

of cases of malaria among the company's employees.—J. A. M. A., June 7, 1947.

PENICILLIN TREATMENT OF SCARLET FEVER

Hirsh, Rotman-Kavka, Dowling and Sweet¹ and Hoyne and Brown² have recently reported on their experience with penicillin in the treatment of scarlet fever. The first group concludes that:

"1. Eighty-six patients with scarlet fever have been treated with penicillin X, crystalline penicillin G and commercial penicillin.

"2. Penicillin therapy resulted in a prompt fall in temperature, a decrease in toxicity and a decided reduction in the incidence of pyogenic complications and of the carrier state.

"3. Penicillin is more effective than antitoxin or symptomatic therapy in the prevention of complications and in reducing the number of carriers and was equally as effective in decreasing toxicity. Antitoxin caused a more rapid decline in temperature than did penicillin. On the other hand, the temperature dropped more rapidly in patients given penicillin than in symptomatically treated patients."

The second investigating group tells us in conclusion that:

"One hundred sixteen patients with scarlet fever were successfully treated with penicillin.

"On the basis of our observations, penicillin is equally as good a therapeutic agent for scarlet fever as convalescent scarlet fever serum.

"Penicillin is superior to sulfonamide drugs as a therapeutic measure for scarlet fever.

"The most important advantage which the penicillin-treated patients possessed was that fewer complications followed its use than occurred with other forms of therapy.

"Because our study included but few cases of severe scarlet fever, we believe a thoroughly reliable estimate of penicillin's

1. Hirsh, Harold L.; Rotman-Kavka, Georgine; Dowling, Harry F., and Sweet, Lewis K.: Penicillin Therapy of Scarlet Fever, J. A. M. A. 133: 657 (March 8) 1947.

2. Hoyne, Archibald L., and Brown, Rowine Hayes: Penicillin for Scarlet Fever, J. A. M. A. 133: 661 (March 8) 1947.

worth can only be determined by using it against virulent types of scarlet fever.

"Until it is proved that penicillin far outweighs in efficiency all other kinds of treatment for scarlet fever, its customary method of administration must be regarded as an obstacle to its use."

It is heartening to see two such reports coming from separate and eminent sources. Apparently penicillin is proving to be effective when used against scarlet fever, a disease for which we had only symptomatic treatment until rather recent times. Those practitioners with twenty years of experience behind them can well remember both the joy and trepidation with which scarlet fever antitoxin was received, because it did so much good and because, especially at first, it caused numerous and severe reactions. Often times it was withheld in the mild or moderately severe cases because of a well founded fear of an intense reaction. Then came the sulfonamides and again the story was the same, both excellent results and many and various untoward reactions being encountered. And now penicillin, with its high therapeutic efficiency and its low toxicity, appears to be the treatment of choice.

However, a note of caution is in order. It is generally agreed upon that for some years past most epidemics of scarlet fever have been mild. And Hoyne and Brown are certainly upon firm ground when they remind us that penicillin must be tested against virulent types of scarlet fever before we can reliably estimate its worth.

NOTICE TO INDIANA LICENSEES

This Journal has been asked to give publicity to Indiana's new law requiring annual registration of physicians licensed by that state to practice medicine. Advice furnished by the Indiana State Board of Medical Registration and Examination, K. of P. Building, Indianapolis, is to the effect that the non-resident fee is \$10.00 and must accompany the application by money order or certified check remitted not later than August 31.

Excerpt from the law on the subject is as follows:

Chapter 254 of the 1947 Acts of the General Assembly of Indiana, requires; That, every person who now holds, or may hereafter hold, a

valid and unrevoked certificate for a license to practice the Healing Art in any form or manner, granted by the Board of Medical Registration and Examination of Indiana, shall be required to register with said Board, during the month of July and not later than the last day of August, immediately following the effective date of this Act, which registration shall be for the period ending June 30, 1948, and shall, annually thereafter, on or before August 31st of each year, be required to register with said Board. Each applicant for registration shall remit with his application the sum of Five (\$5) Dollars as the annual registration fee if he resides within the boundaries of the State of Indiana; and if residing outside the boundaries of the State of Indiana, shall remit the sum of Ten (\$10) Dollars as the annual registration fee; Provided, that no registration or fee for registration shall be required of any holder of a certificate on or before the month of July of the year following the year within which such certificate was issued. Failure to comply with provisions of this Act shall operate automatically to cancel his/her certificate, and any license issued thereunder, and continued practice after cancellation of the certificate and license issued thereunder shall be considered as practicing without a license. A certificate cancelled for failure to register may be reinstated by said Board upon submission of the applicant's last registration certificate together with current and delinquent fees, and a penalty in the sum of Ten (\$10) Dollars.

CALL ON SOME DOCTORS, SON

The apple-cheeked investment salesman, freshly weaned from college, sets forth in the world with two pieces of equipment—a brief case for that dignified look, and some sound advice from his elders.

The old-timers in stocks and bonds slap him on the back and give him the advice they had when they were young:

"Go call on some doctors, son."

It is sound advice. Physicians, too often, are good prospects for blue sky investments. When it comes to slick trading in securities, they haven't time to investigate. They're scientists, analysts of human ailments, artists of the operating room, travellers in the night, worriers, dreamers, thinkers and curers. But not financiers.

Diagnose an illness? Sure. But when a thousand dollars could be made or lost on a one-point change in Giltedge Preferred, they're busy; a child's appendix has ruptured.

Buy the best x-ray machine at the right price? Probably. But skillfully manipulate industrial investments to put their children through college? Or to take care of the fam-

ily when the old ears are not so sharply attuned to the stethoscope, hands not so sure on the scalpel? Not very often.

A doctor is a busy man and a hopeful one—hopeful that the fees will take care of the future. True, some physicians are wealthy, or near it. To most, wealth is just something someone else enjoys. But many doctors, lulled by the crowded waiting rooms which went hand-in-hand with the war-born doctor shortage, figure they'll be pretty well set for retirement, the way fees are piling up.

Yes, the physician needs a bullet-proof investment and the United States has provided it in savings bonds. We all know that, but just to make it available isn't enough.

Most doctors need something more. In business matters they need a string tied around a finger. The Government is offering this to them in the new Bond-a-Month Plan. Your bank ties the string, gives it a yank every month. And all the doctor has to do is leave it there. Wilson Mizner said: "The gent who wakes up and finds himself a success hasn't been asleep." As to planning his future, once the doctor has invested in Bond-a-Month, he *can* give all his attention to his important work.

Before getting down to what the Bond-a-Month Plan can do for the non-salaried physician, let's take a look at some of the facts in the case of the average practitioner. He's busy, more of late than ever before. His routine is hospital calls, perhaps an operation or two, office hours, house calls, office records, telephoning, more calls after dinner. Every so often a baby fails to realize the doctor has a schedule, or someone breaks a leg, or gets measles. Even the specialists work no 9-to-5 day.

The U. S. Department of Commerce has made studies of doctors' incomes, based on reports of a sample of the 129,000 men and women in private practice in 1940. The studies show that the income rises slowly to a maximum in the early 50's and then starts dropping. From 35 to 54 is the real money-making period.

At 35, most doctors have begun to pay off their starting-in-business debts, have built up a small neighborhood practice and are becoming known. Their practice grows with ability. By the time they are 54, other doctors, young and vigorous, have come in with new methods, machines, theories. They

make inroads into the established practice of the veteran. The older man no longer so willingly drives out into the country on sick calls. Office hours are shaved a little at the start and the end of the day. There are fewer operations.

And somehow, without the doctor's really knowing why, the bank balance doesn't hold up the way it used to.

To come as close as we can to keeping the horse in front of the cart, let's see what Bond-a-Month will do and then explain why this is the solution to the physician's problem of saving for future security.

Bond-a-Month opens systematic saving through Government bonds to anyone with income and a checking account in a bank. Until now this was available only through payroll savings. It operates this way:

The depositor who wishes to buy a bond each month signs a card authorizing the bank to deduct the purchase price from his checking account. The bank issues the bonds and delivers them to the customer monthly. The periodic bank statement shows payment for the bonds.

And from the first and the only time the doctor signs his authorization card, he has nothing else to do except open the envelopes the bank sends him with the bonds inside.

What does the physician need?

1. He needs some sort of arrangement for his financial future because, according to studies of his profession, incomes of physicians are much more responsive to change in the national income than are the incomes in other professions. If the national income drops and patients no longer can afford to call on the doctor so often or to pay him as quickly, a doctor's bankbook will feel the change.

2. In most instances, the doctor has no social security or pension to fall back on. Thus, he needs something to serve as an old-age reserve.

3. He needs simplicity—an arrangement which does not call for continual checking, manipulating, buying and selling.

4. He needs safety. He cannot afford to take the risks which must be protected by constant market vigilance, by buying and selling strategically.

A savings bond plan should be the foundation upon which the physician builds his security. There is no safer investment in

the world than savings bonds. There is no riskless investment which pays such a guaranteed return.

Consider:

If you invest
monthly under
the Bond-a-
Month Plan

In five years
you will have

In ten years
you will have

\$37.50	\$ 2,319.00	\$ 4,998.00
75.00	4,638.00	9,996.00
100.00	9,276.00	19,992.00
300.00	18,552.00	39,984.00

Here, for the doctor himself, are vitamins E, F and G, thoroughly tested and always compounded with interest. These vitamins ease common symptoms of post-middle age such as chronic worry and doubt. They are available at a bank near you. And with millions of current users, we can make this unusual guarantee: one and a third times your money back if you *are* satisfied.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

THE BIRTH OF PUBLIC HEALTH NURSING SERVICE

The public health nurse is as much a part of public health work in Alabama and the rest of the civilized world as are the County Health Officer and the public health laboratory. The set-up of this State's public health system calls for at least one public health nurse for even the smallest County Health Department, and as the county grows in size, financial resources and needs, she is joined by others to make it possible for the department to discharge its responsibilities to the people it serves. And those on the staffs of County Health Departments represent only a part of Alabama's public health nurses. For they are also on the staff of the State Department of Health, usually consultants in special fields.

In view of the matter-of-fact way in which we accept the services of our public health nurses, it is difficult to imagine a time when there was no such thing. We are inclined to wonder how the sick got along, especially the indigent sick and those in that economic twilight zone between penury and relative financial security.

But, like so many other highly desirable things that we accept so casually in these advanced times, the public health nurse is a relative new comer to the profession of public health. Indeed there are many people still living who were by no means infants when public health nursing became a part of public health work.

The public health nurse would have been considerably slower in appearing on the American scene had a certain young woman not been sent to employ a private-duty nurse to care for her married sister who was about to become a mother. In the performance of this simple duty she had an opportunity to meet and talk with—presumably for the first time in her life—a member of the profession which Florence Nightingale has given a high place in the affections of the English-speaking world. The more she talked with this woman, and the more she found out about this profession of nursing, the stronger grew her determination to make this woman's profession her own. The writer does not know the name of the nurse who stirred such a strong desire in this young woman's heart, and played such an important, though indirect, role in public health. But that young woman who was influenced so greatly is known by reputation the world around. She was Lillian D. Wald.

She was born in Cincinnati on March 10, 1867, nearly two years after the end of the War Between the States. Like so many other molders of American history, through their own efforts, and through their children, her parents had fled to this country to escape oppression in Europe.

There were not many educational advantages for young women at that time, and Lillian had to leave home to find a suitable school. The one she attended—a private institution—was in Rochester, N. Y., and there she received her formal schooling. After that was over, she lived like most other well-to-do young ladies of her time, and

probably would have lived out her life in a manner little different from that of thousands of other young women if her sister had not had a baby and sent her to fetch the nurse.

Thanks to that bit of errand-running and its results, Lillian Wald enrolled at the School of Nursing at New York Hospital in August, 1889, and completed her course in March, 1891. Soon after her graduation she became a nurse in an orphan asylum, and then she became a student again, this time at the Woman's Medical College. During the year she studied there, she volunteered for work as a teacher of a class in home nursing, attended by immigrant women living in New York's East Side. Here she had another experience that made a tremendous impression upon her, and definitely set her feet in the path which she was to tread the rest of her life. For, on a rainy morning in March, 1893, she accompanied a badly frightened child through a part of New York's most poverty-stricken section to a miserable tenement. There she found a family of seven, plus boarders, living in two rooms. The mother was dangerously sick. Her condition stirred Lillian Wald's sympathy, of course, but what appealed to it even more was the wretchedness she found here, particularly the dirty bed on which the sick woman was lying, made even more repulsive by blood from hemorrhage which had occurred two days earlier. Then and there public health nursing as we know it had its birth.

"Spiritually, that was a journey from which Lillian Wald never returned," wrote the anonymous author of a booklet issued by the Metropolitan Life Insurance Company. "It was her 'baptism of fire,' as she wrote later, and after a sleepless night she decided to live on the East Side. With the capacity to inspire others which never left her, she persuaded Mary Brewster, a companion of her training school days, to share her venture, and she secured the backing of Jacob Schiff and other friends who were to stand by her in increasing numbers throughout her life."

That anonymous writer had the following to say about the infant days of this great movement for better health among the people of New York's East Side and the whole country.

"The East Side of 1893 was a bottleneck of overcrowded, rickety tenements and narrow streets into which hundreds of thousands of immigrants were pouring every year. There the sweated trades still flourished, the sick and dying lay untended in their miserable homes, and the death rate rose to terrifying heights in the so-called 'lung blocks.' And there, early in September, Lillian Wald and Mary Brewster established themselves on a vacant floor at the top of a house in Jefferson Street. Their plan was very simple. They would do what they personally could as nurses to help their neighbors, and they would tell the world about the horrors of the East Side. It was Lillian Wald's naive conviction, as she confessed later, that such conditions were allowed to exist because people didn't know about them.

"It did not take the Eastsiders long to find out that two friendly American women were living among them. And these women did not try to uplift them, or sentimentalize over them, or offer them charity. They became known only as 'ladies who would listen,' and in that depression winter of 1893-1894, when men left home, not to work, but to seek the chance to work, there were plenty of troubles to tell."

The work Lillian Wald and Mary Brewster started there on New York's East Side was not the first example of this kind of service in the interest of people's health. Members of religious orders for many centuries had been visiting the sick poor, and others had followed their worthy example without sharing their religious zeal, being inspired only by a burning desire to carry health and healing to those who lacked the means of providing for it themselves. But the pre-Lillian Wald type of nursing carried the label of charity and, with all its noble intentions, stamped its recipients as financial failures unable to earn the money required for life's necessities. She and her companion, in kindness, determined to change all this. Sending for one of them, they resolved, would not necessarily involve acceptance of charity, or public humiliation. So they let it be known that they would render free service to those unable to pay and accept payment—as much as people felt they should or could pay—from those more fortunately situated. And who was able to say which patients were paying and which were not paying, except these women themselves? And they were not telling. So their tender ministrations became even more welcome from the knowledge that their beneficiaries were not being tagged for one and all to see as objects of charity.

The new project's rapidly expanding activities soon made it necessary to find larger quarters, and these were found on Henry Street. And at 265 Henry Street, Lillian Wald remained, dreamed, and labored, for nearly 40 years. As time went on, that address became the starting point and try-out spot of many new ideas which have given new meaning and color to man's efforts to help his fellow-man.

"By inventing the terms 'public health nurse' and 'public health nursing' Lillian Wald identified visiting nurse service with the great public health movement which was at that time getting under way for the benefit of the people of America," the already mentioned anonymous pamphleteer wrote. "The functions of the public health nurse as she defined them were 'first, the expert care of the sick in their homes,' and second, the education of the patients and their families in 'the facts of life.' Every home visited was to be a classroom, with the nurse as the teacher carrying to the people themselves the 'findings of the scientists and the laboratories' in words and demonstrations they could understand."

Miss Wald soon found that public health nursing was a separate profession from other types of nursing, and called for special training. So she was instrumental in the establishment of a course for public health nurses at Teachers College, Columbia University. That was in 1910. Meanwhile 265 Henry Street itself was rapidly gaining a reputation as a training school for public health nurses, and large numbers of young women who worked there went out to extend their field of usefulness and life-saving literally to the four corners of the earth. Upon her recommendation, the American Red Cross began its nursing service for both urban and rural patients in 1912, and about the same time she helped to establish and became president of the National Organization for Public Health Nursing. Thanks also to enthusiastic urging from Lillian Wald, the New York City Health Department began, in 1902, the world's first school-nursing service maintained by a city's taxpayers. Still another scheme of hers, which likewise paid off handsomely, was to use the representatives of the Metropolitan Life Insurance Company as health educators. From it came the close associa-

tion of that large company with the Henry Street Visiting Nurse Service which brought to the former's policyholders the benefits of the latter's visiting nurse care.

But Lillian Wald had even more ambitious plans. Learning that the Federal Government was about to spend a large sum to fight the boll weevil, she convinced President Theodore Roosevelt that the saving of the lives of mothers and babies was even more important than saving the cotton crop, and, as a result, Congress introduced a bill to establish a Children's Bureau, although, like other notable achievements, it required some time—until 1912—to win that body's approval.

There were other notable achievements to her credit, including the conversion of three back yards into playgrounds where youngsters could play to their hearts' content without being in danger of being killed or maimed by traffic; the opening of New York's first municipal playground, Seward Park; organization of the American Heroes, a boys' club; and the launching of the now-famous Neighborhood Playhouse, which occupies a shining place in the history of the American theater. These and other activities caused the famous and wealthy, as well as the poor and unknown, to make a well beaten path to her door.

Lillian Wald was privileged to live longer than many of her contemporaries and even beyond the Biblical "three-score years and ten." But death came at last, on the first anniversary of the outbreak of World War II, and her labors of life-saving and health-bringing had to be placed upon other shoulders. But she had done her work so well and had caused so many others to enter the field in which she pioneered so bravely, that the work went on without a break or falter. But there were sad hearts, not only on New York's East Side, but throughout the world, over the passing of one who had done so much to brighten the lives of society's orphans.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

APRIL 1947

Examinations for diphtheria bacilli and Vincent's	266
Agglutination tests (typhoid, Brill's and undulant fever)	956

Typhoid cultures (blood, feces and urine) ..	926
Examinations for malaria	508
Examinations for intestinal parasites	2,708
Serologic tests for syphilis (blood and spinal fluid)	27,473
Darkfield examinations	40
Examinations for gonococci	3,579
Examinations for tubercle bacilli	2,137
Examinations for meningococci	3
Examinations for Negri bodies (microscopic)	126
Water examinations	1,179
Milk and dairy products examinations	2,928
Miscellaneous	509

Total 43,338

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Acting Director

CURRENT MORBIDITY STATISTICS

1947

	Feb.	Mar.	E.E.* Mar.
Typhoid	1	4	6
Typhus	21	19	11
Malaria	18	37	70
Smallpox	1	0	2
Measles	98	485	1026
Scarlet fever	71	101	88
Whooping cough	154	254	127
Diphtheria	31	44	34
Influenza	388	3660	939
Mumps	47	192	259
Poliomyelitis	7	6	2
Encephalitis	0	0	1
Chickenpox	132	540	175
Tetanus	2	5	3
Tuberculosis	162	377	224
Pellagra	1	2	6
Meningitis	8	16	21
Pneumonia	225	432	528
Syphilis	1702	2321	1655
Chancroid	13	27	12
Gonorrhea	671	890	401
Trachoma	0	0	6
Tularemia	12	6	0
Undulant fever	12	12	2
Dengue	0	0	0
Amebic dysentery	6	2	0
Cancer	233	269	0
Rabies—Human cases	1	0	0
Positive animal heads	46	60	

	Mar.	Apr.	E.E.* Apr.
Typhoid	4	4	5
Typhus	19	12	14
Malaria	37	38	98
Smallpox	0	0	1
Measles	485	1151	834
Scarlet fever	101	59	64
Whooping cough	254	373	180
Diphtheria	44	8	27
Influenza	3660	4614	433
Mumps	192	127	221
Poliomyelitis	6	1	2
Encephalitis	0	1	2
Chickenpox	540	570	182
Tetanus	5	2	5
Tuberculosis	377	287	264
Pellagra	2	5	10
Meningitis	16	11	17
Pneumonia	432	425	371
Syphilis	2321	1788	1585
Chancroid	27	31	8
Gonorrhea	890	786	440
Trachoma	0	0	0
Tularemia	6	2	1
Undulant fever	12	14	4
Dengue	0	0	0
Amebic dysentery	2	2	0
Cancer	269	217	0
Rabies—Human cases	0	0	0
Positive animal heads	60	55	0

As reported by physicians and including deaths not reported as cases.

*E.E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

A. N. Beck, M. S. in S. E., Director

TRENDS IN GENERAL SANITATION WORK

Contributed by

W. H. Gilmore, B. S. in C. E.

Sr. Pub. Health Eng.

During the War there was much talk and planning for postwar times. The second year of that era is with us. There are indications and trends which make it appear that at least some of these plans are materializing or are going to materialize. Many of the problems which retarded sanitation work during the war years are still present: scarcity of materials, labor and health department personnel. However, the future is bright,

School sanitation work is definitely beginning to show signs of improvement. Recently the Jefferson County Board of Education made plans to replace the earth pit toilets at about fifty county schools with water flush toilets. Surveys have been completed and materials are being collected to begin this work immediately. Several other counties have had surveys made to convert the sanitary facilities at certain schools in their respective counties.

In one of Alabama's large cities where the privy construction program is not complete, but is progressing nicely, long range plans are being formulated for further improving the human excreta disposal method. The Health Department, cooperating with the City, is laying plans to replace the privy system which it is now building. It is planned to replace the earth pit privies with flush toilets connected to sewers when the present individual privy needs rebuilding or has served its economic lifetime. Two factors have largely been responsible in the past for not connecting all houses to sewers in sewered areas: first, the cost of the original installation and, second, the water bill incurred through use of such facilities.

To solve these problems it is proposed that the municipality, through powers granted it by the Legislature in what is known as the Kelly Act, help by financing the installation and extending divided payment privileges to the owners. When such financial aid is extended the municipality

secures a lien on the property which is prior to all other liens. Whenever possible the owners will finance the installation rather than give such a lien upon their property. Therefore, there may be a relatively small number of installations which the city will be called upon to finance.

The second problem may be met by arranging for the water customers, with perhaps only one hydrant and a commode, to have a smaller minimum water allowance, hence a smaller minimum bill. Also arrangements might be made to allow this type customer to make monthly payments, receipting the individual at the end of the quarter rather than billing him quarterly for a relatively large water bill.

There will no doubt remain in any town certain areas which can not be sewered because of the topography.

Certain large sheet metal companies are considering the prefabrication of privies. Both sheet iron and aluminum are being considered. If and when privies are successfully prefabricated, and dealers over the county begin handling them, another big step toward completely sanitating the State will have been taken.

It appears that the War has done much toward making the people conscious of the need for sanitary facilities. However, the desire for conveniences is still a major reason for the installation of water under pressure and water flush toilets with septic tanks. Whatever the reasons involved and despite the much higher cost, considerably more septic tanks than privies are being installed throughout the State, with the exception of Montgomery County where an intensified privy program is being conducted. The construction of septic tanks appears to be the trend and it will no doubt increase as more electric power lines are extended through the rural areas.

Municipalities are becoming concerned relative to sanitary conditions within their respective communities. This is evidenced by the requests, comments and observations received by the Bureau of Sanitation. Counties are anxious for and requesting assignment of sanitation officers.

Therefore, it appears that it least some of the postwar plans will be carried out. This, with the manifested interest of more people in sanitation, tends to push back the hovering dark clouds.

BOOK ABSTRACTS AND REVIEWS

The Pharmacopeia of the United States of America. Thirteenth Revision (U. S. P. XIII). Prepared by the Committee of Revision and published by the Board of Trustees, United States Pharmacopeial Convention. Official from April 1, 1947. Cloth. Price, \$8.00. Easton, Pennsylvania: Mack Printing Co.

The twelfth revision of the U. S. P. became official in 1942 but the rapid advance in the field of pharmacopeial research necessitated the publication within two years of six supplements. During the subsequent few years while the present revision was being prepared, eleven supplements were added. For this reason the publishers of the volume have formed a policy of mailing to the purchaser of the current Pharmacopeia all revisions which are made up to the time of the subsequent publication. For this purpose there is included in the back of the book a postcard for mailing to the publisher, through whom these revisions may be obtained.

The purpose of the Pharmacopeia is to determine the standards for identification and assay of those drugs which are considered to be of accepted value in the treatment of human illnesses.

There is no attempt to discuss pharmacologic action or clinical application or toxicology, and references to dosage refer only to the average adult dose.

To put the letters U. S. P. behind the name of a drug on a prescription is paramount to a guarantee that the drug dispensed will meet those requirements of purity which are deemed necessary for human use.

In the new edition are included many of the newer sulfa compounds, various forms of penicillin medication, chiniofon, cholera vaccine, diethylstilbestrol, crystalline digitalis derivatives, ergotamine tartrate, estradiol, human immune globulin, helium, histamine phosphate, various derivatives of testosterone, neostigmine, nethyl-sulfate, nicotinic acid derivatives, papaverine, plague vaccine, human plasma, quinacrin hydrochloride and typhus vaccine.

This volume should be on the shelves of every druggist. The physician who wishes to keep up with the nature of the products which he is dispensing to his patients will get a great deal of material from this source.

C. K. Weil, M. D.

Experiences With Folic Acid. By Tom D. Spies, M. D., Associate Professor of Medicine, University of Cincinnati School of Medicine, Director of The Nutrition Clinic, Hillman Hospital, Birmingham, Alabama. Cloth. Price, \$3.75. Pp. 110, illustrated. Chicago: The Year Book, Publishers, Inc., 1947.

The name of Tom Spies is well known to every physician in Alabama. The work at the Nutrition Clinic in Birmingham has come to the attention of every practicing physician in the State. In the course of that investigation the author found a large number of patients with nutritional disturbances who had a macrocytic anemia. A similar type of anemia was found in Havana and San Juan in patients suffering from tropical sprue. The blood picture in all three groups of cases bore certain definite similarities.

Attempts had previously been made to isolate from liver, yeast and other sources a pure substance in the nature of a vitamin which might be the extrinsic factor whose absence from the diet was responsible for pernicious anemia. One of these substances was isolated and subsequently synthesized and given the name of folic acid. It was definitely not identical with the extrinsic factor concerned in pernicious anemia but Spies started his studies on the effect of synthetic folic acid in human beings in 1945 and found that its administration, either orally or parenterally, results in the production of remissions in pellagrins with macrocytic anemia. Since then the use of this drug has been extended to other anemias, including the macrocytic anemia of pregnancy, sprue and Addisonian anemia. In all of these there was found a prompt and marked response of the marrow and circulating blood and a rapid remission of symptoms, but while the general symptoms—glossitis, edema and intestinal disturbances—were relieved, it was noted that folic acid neither cures nor prevents the cord changes of Addisonian anemia.

In a small monograph of 110 pages Spies has presented a summary of the research work done by him and by his associates and has presented to the medical profession the first example of the use of a pure crystalline substance, the administration of which results in a definite hemopoietic response in patients with macrocytic anemia, contributing thereby a new impetus to the solution of the problem of Addison's or so-called idiopathic pernicious anemia.

C. K. Weil, M. D.

Rehabilitation Through Better Nutrition. University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama. By Tom D. Spies, M. D. From the Department of Internal Medicine, University of Cincinnati College of Medicine. Cloth. Price, \$4.00. Pp. 94, with 50 figures. Philadelphia: W. B. Saunders Company, 1947.

In order to understand the purpose of Spies' new book on nutrition it is necessary to define the term rehabilitation. In using this word the author is concerned primarily with restoration and maintenance of health in those who are mal-

nourished in order that they may be restored to capacity for full work.

The studies on which this monograph is based were made at the Nutrition Clinic at the Hillman Hospital in Birmingham, Alabama. A diagnosis of vitamin deficiency was made after careful history, physical examination and study of dietary habits. Most of the patients had a mixed deficiency, involving not only vitamins but iron, protein and the extrinsic factor involved in pernicious anemia. Nine hundred fourteen (914) patients who were considered to be potential workers and who had proved deficiency disease formed the basis for this study. Treatment consisted of a diet suited to the individual's needs and, except in the case of the obese, approached 4,000 calories a day. This amount was considerably in excess of the caloric and vitamin A requirements recommended by the Committee on Foods and Nutrition. It was supplemented by vitamins, liver and yeast when considered necessary. Co-existing diseases were treated and conditions causing excessive requirement of nutrients were removed whenever possible. Protein intake ranged between 120 and 150 gms. Relief of symptoms was usually prompt but the ability to continue work was dependent upon the maintenance of an adequate dietary intake. A successful rehabilitation demands not only adequate diet to relieve symptoms but a continuation of such diet in order to maintain a normal state of health. Without such maintenance nutritive failure is bound to reappear.

Those of us who practice in the South recognize the fact that many individuals partake of a diet totally inadequate in the essential food requirements. The treatment of these patients requires a considerable amount of patience, but when the result consists of returning a sick father to a job through which he can support his family and through which he may afford an adequate food intake, the physician can feel that he has accomplished as much or more than could be accomplished through the temporary relief of a patient with cardiac failure.

This monograph by Spies should appeal not only to those whose practice is largely rural but also to those whose patients can well afford a varied diet but whose tastes, alcoholic habits and accompanying disease interfere with adequate consumption. The obstetrician will find that his patient, going through a period of increased nutritive need, can be benefited by proper dietary instructions.

C. K. Weil, M. D.

1948 SESSION
OF THE
ASSOCIATION
ADMIRAL SEMMES HOTEL
MOBILE
APRIL 15, 16, 17

THE ROSTER OF THE ASSOCIATION

THE ANNUAL ROSTER OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA 1947 ROSTER BY COUNTY SOCIETIES

ABBREVIATIONS AND SYMBOLS

(S.) indicates that the physician is in the service of his country.

mc Ala. 06 indicates school and year of graduation.

cb 94 indicates licensure by county board of medical examiners in county where located, and year licensed.

cb Butler 94 indicates county board of medical examiners granting license, and year licensed.

sb 10 indicates licensure by the State Board of Medical Examiners, and year licensed.

recip. Miss. 27 indicates licensure by reciprocity, the reciprocating state, and year reciprocity was granted.

NBE indicates licensure by reciprocity with the National Board of Medical Examiners.

* indicates that the Health Officer is serving two counties, and footnote gives county where credentials may be found.

(1) AUTAUGA COUNTY

Montgomery 1874

President—J. E. Wilkinson	Prattville
Vice-President—G. M. Taylor	Prattville
Secretary-Treasurer—E. M. Moore	Prattville
County Health Officer—E. M. Moore	Prattville

Censors—G. E. Newton, Chairman, Prattville; E. M. Thomas, Prattville; G. M. Taylor, Prattville; James Tankersley, Prattville; R. G. Shanks, Autaugaville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Moore, Elisha M., mc Ala. 11, sb 13, Prattville.
Newton, George E., mc Tenn. 35, sb 36, Prattville.
Shanks, Rufus George, mc Memphis Hosp. 01, cb Butler 01, Autaugaville.

Tankersley, James, mc Ala. 06, cb Crenshaw 06, Prattville.
Taylor, George Malcolm, mc Atlanta P. & S. 05, cb Montgomery 05, Prattville.

Thomas, Eugene Marvin, mc P. & S. Baltimore 07, cb 07, Prattville.

Wilkinson, John Edward, Jr., mc Univ. South 00, cb 00, Prattville.

Total 7

PHYSICIANS NOT MEMBERS

Campbell, V. O., mc Ala. 00, cb 00, Billingsley.
Zimmerman, Albert Sidney, mc Univ. South 97, cb Lawrence 98, Prattville, Rt. 3.

Total 2

(2) BALDWIN COUNTY

Anniston 1886

President—E. J. Joubert	Foley
Secretary-Treasurer—W. B. Nelson	Bay Minette
County Health Officer—W. B. Nelson	Bay Minette

Censors—J. C. McLeod, Chairman, Bay Minette; C. G. Godard, Fairhope; P. M. Hodgson, Stockton; R. A. Hail, Robertsedale; W. C. Holmes, Foley.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Armistead, Sidney Davidson, mc Ala. 10, sb 11, Robertsedale.

Britton, Jas. Woodruff, mc Emory 27, recip. Ga. 30, Foley.

Bryant, Percy A. mc Emory 29, recip. Ga. 46, Bay Minette.

Dahlgren, Leora Perry, mc S. C. 23, recip. W. Va. 43, Fairhope.

Godard, Claud George, mc Ala. 14, sb 14, Fairhope.

Hail, R. A., mc Tenn. 94, cb 01, Robertsedale.

Hodgson, Philip Morton, mc Atlanta 89, cb Monroe 89, Stockton.

Holmes, William Coghlan, mc Tulane 24, recip. La. 26, Foley.

Jordan, Henry C., mc LSU 34, recip. La. 37, Robertsedale.

Jordan, Henry W., mc Memphis Hosp. 12, sb 12, Robertsedale.

Joubert, Edward Joseph, Jr., mc LSU 43, recip. La. 46, Foley.

McLeod, John Calvin, mc Ala. 00, cb Coosa 00, Bay Minette.

Meeks, Alfred A., mc Ala. 14, sb 14, Foley.

Nelson, William Bruce, mc Tulane 37, recip. La. 39, Bay Minette.

Petrick, Albert C., mc Univ. Ill. 30, recip. Ill. 46, Fairhope.

Sherman, Charles R., mc Tulane 42, sb 43, Bay Minette.

Skinner, Percy B., mc Ala. 05, cb Conecuh 05, Fairhope.

Stanley, Robert Hendricks, mc Ala. 94, cb Butler 94, Foley.

Total 18

PHYSICIANS NOT MEMBERS

Caffee, William M., mc Ala. 14, sb 14, Fairhope.

Jones, Thomas Wilkins, mc Memphis Hosp. 06, recip. Tenn. 41, Loxley.

Reneke, Edward J., mc Tenn. 29, recip. Tenn. 32, Elberta.

Teaford, Benjamin J., mc Univ. Louisville 02, recip. Ind. 37, Fairhope.

Van Iderstine, Reginald, mc Chicago 06, cb 07, Daphne.

Total 5

(3) BARBOUR COUNTY

Eufaula 1878

President—Nell R. Eppes	Eufaula
Vice-President—James Reid	Clayton
Secretary-Treasurer—G. O. Wallace	Clayton
County Health Officer—G. O. Wallace	Clayton

Censors—J. B. Adams, Chairman, Eufaula; R. O. Norton, Louisville; James Reid, Clayton; P. P. Salter, Eufaula; J. S. Tillman, Clio.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Adams, John Ball, mc Vanderbilt 30, sb 30, Eufaula.

Bennett, Clarence R., mc Emory 28, recip. Ga. 29, Eufaula.

Clark, Hugh G., mc Texas 34, recip. Texas 37, Fairlington, Va.

Comer, Edward T., mc Vanderbilt 35, sb 35, Eufaula.

Eppes, Kendall, mc LSU 42, recip. La. 46, Eufaula.

Eppes, Nell R., mc LSU 42, recip. La. 45, Eufaula.

McInnis, William R., mc Memphis Hosp. 96, cb 99, Clio.

McLaughlin, James Daniel, mc Ala. 10, sb 10, Blue

Springs.

Norton, Robert Olon, mc Ala. 11, sb 11, Louisville.
 Reid, James, mc Ala. 12, sb 12, Clayton.
 Salter, Paul Pullen, mc Tulane 16, sb 16, Eufaula.
 Tillman, John S., mc Grant 07, cb 07, Clio.
 Wallace, George Oscar, mc Ala. 91, cb 91, Clayton.
 White, Robert Lee, mc Ala. 98, sb 98, Mt. Andrew.

Total 14

PHYSICIANS NOT MEMBERS

McCoo, Thomas V. (col.), mc Leonard 06, cb 07, Eufaula.
 Total 1

(4) BIBB COUNTY

Birmingham 1887

President—S. C. Meigs Centerville
 Vice-President—J. Ethel Montgomery Belle Ellen
 Secretary-Treasurer—J. R. Long Centerville
 County Health Officer—J. R. Long* Centerville
 Censors—S. C. Meigs, Chairman, Centerville; C. F.
 Krout, Brent; L. E. Peacock, West Blocton; T. E. School-
 ar, Centerville; W. J. B. Owings, Brent.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Crowder, John W., mc Univ. South. 04, cb 05, Belle Ellen.
 Krout, Charles F., mc Ala. 95, cb 95, Brent.
 Meigs, Stephen C., mc Ala. 02, cb 02, Centerville.
 Montgomery, J. Ethel (Mrs. J. W. Crowder), mc Univ.
 Minn. 28, recip. Minn. 32, Belle Ellen.
 Nicholson, Cooper, mc Ala. 13, sb 19, Centerville.
 Owings, William J. B., mc Tulane 32, sb 32, Brent.
 Peacock, Lovic Edward, mc Ala. 92, cb Marengo 92, West
 Blocton.
 Pratt, Alsey C., Jr., mc Washington Univ. 43, recip. Md.
 46, Centerville.
 Scholar, Thornly Edward, mc Vanderbilt 92, cb 92, Cen-
 terville.
 Singleton, George F. W., mc Duke 43, NBE 46, Henry
 Ford Hospital, Detroit.
 Warren, Palmer H., mc Univ. Louisville 46 recip. Ky.
 47, W. Blocton (S.)
 Total 11

PHYSICIANS NOT MEMBERS

None

(5) BLOUNT COUNTY

Eufaula 1878

President—E. T. Brown Cleveland
 Vice-President—C. V. Hendrix Oneonta
 Secretary-Treasurer—T. M. Towns Oneonta
 County Health Officer—T. M. Towns Oneonta
 Censors—E. T. Brown, Chairman, Cleveland; C. L.
 Stansberry, Oneonta; W. W. Klein, Altoona, Rt. 2; T. M.
 Towns, Oneonta; J. L. Wittmeier, Cleveland.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Brown, Elridge Tracy, mc Vanderbilt 17, recip. Tennessee
 19, Cleveland.
 Denton, Marvin, mc Univ. Nashville 05, cb 07, Oneonta.
 Denton, Nathan Carter, mc Univ. Nashville 05, cb 06,
 Oneonta.
 Hendrix, Clive V., mc Univ. Tenn. 27, recip. Tenn. 29,
 Oneonta.
 Klein, Warwick Wesley, mc Univ. Louisville 05, recip.
 Ky. 19, Altoona, Rt. 2.
 Miles, William C., mc Ala. 00, cb Limestone 00, Oneonta.
 Self, George Washington, mc Baltimore 90, cb 90, Traf-
 ford.

*See also Perry County.

Stansberry, Chas. Lee, mc Grant 99, cb Fayette 01, One-
 onta.

Towns, Thos. M., mc Univ. Ark. 29, sb 29, Oneonta.
 Whitehead, Vernon Erick, mc Ala. 15, sb 15, Blountsville.
 Wittmeier, James L., mc LSU 40, recip. La. 41, Cleveland.
 Total 11

PHYSICIANS NOT MEMBERS

Bell, James Edgar, mc Univ. Nashville 91, sb 17, Trafford,
 Rt. 1. (License revoked April 19, 1943.)
 Total 1

(6) BULLOCK COUNTY

Eufaula 1878

President—C. M. Franklin Union Springs
 Vice-President—C. W. McDonald Union Springs
 Secretary-Treasurer—J. K. Haygood Union Springs
 County Health Officer—C. W. McDonald Union Springs

Censors—W. H. McCaslan, Chairman, Union Springs;
 C. M. Franklin, Union Springs; C. W. McDonald, Union
 Springs; J. K. Haygood, Union Springs.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Franklin, Charles Moore, mc P. & S. N. Y. 98, cb 98, Un-
 ion Springs.
 Haygood, James Kern, mc Western Reserve 23, recip.
 Ohio 28, Union Springs.
 McCaslan, Wm. Hill, mc Columbia 21, sb 28, Union
 Springs.
 McDonald, Charles W., mc Univ. Nashville 04, cb Cullman
 04, Union Springs.
 Parker, Delmer F., mc Univ. Ore. 37, recip. Ore. 39,
 Indian Hospital, Browning, Mont.
 Total 5

PHYSICIANS NOT MEMBERS

Gomez, Clifton Jules (col.), mc Howard 39 sb 41, Union
 Springs.
 Total 1

(7) BUTLER COUNTY

Montgomery 1875

President—L. V. Stabler Greenville
 Vice-President—J. C. Johnston Chapman
 Secretary-Treasurer—E. F. Leatherwood Greenville
 County Health Officer—E. F. Leatherwood* Greenville

Censors—J. L. Bryan, Chairman, Greenville; James
 Jordan, McKenzie; H. P. Speir, Greenville; L. V. Stabler,
 Greenville; J. E. Kendrick, Greenville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Bryan, James Lafayette, mc Ala. 01, cb Crenshaw 01,
 Greenville.
 Johnston, Jos. Cephas, mc Atlanta P. & S. 12, recip. Ga.
 26, Chapman.
 Jordan, James, mc Memphis Hosp. 12, sb 12, McKenzie.
 Kendrick, James Erasmus, mc Tulane 33, recip. La. 35,
 Greenville.
 Speir, Henry Philip, mc Univ. Louisville 31, sb 32, Green-
 ville.
 Speir, Philip Van Buren, mc Ala. 00, cb Wilcox 00, Green-
 ville.
 Stabler, Aubrey A., mc S. C. 37, recip. S. C. 38, Greenville
 Stabler, E. Vernon, mc Harvard 29, Nat. Bd. Ex. 32,
 Greenville.

*See also Lowndes County.

Stabler, Lorenzo V., mc Vanderbilt 98, cb 98, Greenville.
Watson, Robert H., mc Ala. 05, cb 05, Georgiana, RFD.
Total 10

PHYSICIANS NOT MEMBERS

None.

(8) CALHOUN COUNTY

Montgomery 1881

President—James H. Meigs Anniston
Vice-President—Hunt Cleveland Anniston
Secretary—W. B. Mitchell Anniston
Treasurer—W. M. Salter Anniston
County Health Officer—G. A. O'Connell Anniston

Censors—T. F. Huey, Sr., Chairman, Anniston; N. E. Sellers, Anniston; W. M. Salter, Anniston; A. M. Chilton, Anniston.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Adams, Montague S., mc Tulane 38, sb 39, Anniston.
Caffey, Benjamin F., mc Tulane 11, sb 11, Choccolocco.
Chilton, Alfred M., mc Vanderbilt 34, recip. Tenn 35, Anniston.
Cleveland, Hunt, mc Vanderbilt 32, recip. Tenn. 36, Anniston.
Davie, Nuckols T., mc Tulane 09, sb 09, Anniston.
Durden, John D., mc Ala. 17, sb 17, Anniston.
Gray, Hugh E., mc Univ. Mich. 24, recip. Mich. 26, Anniston.
Green, Elbert Pierce, mc Ga. 99, cb Randolph 99, Jacksonville.
Hamilton, Grover Cleveland, mc Emory 16, sb 16, Piedmont.
Huey, Thomas F., mc Tulane 01, cb Perry 01, Anniston.
Huey, Thomas F., Jr., mc Vanderbilt 32, recip. Tenn. 34, Anniston.
Levi, Irwin P., mc Pa. 09, sb 09, Anniston.
Leyden, Horace A., mc Tenn. 09, sb 10, Anniston.
Lloyd, William K., mc Tulane 21, recip. Va. 38, Anniston.
Lucas, Robert L., mc Vanderbilt 32, recip. Tenn. 34, Anniston.
McCraw, Reuben T., mc Ala. 13, sb 14, Oxford.
Meharg, Shelton T., mc Memphis Hosp. 00, cb 00, Anniston.
Meharg, William G., mc Memphis Hosp. 99, cb 99, Anniston.
Meigs, James H., mc Vanderbilt 25, sb 25, Anniston.
Mitchell, William B., mc Univ. Ga. 38, recip. Ga. 46, Anniston.
Morton, Lloyd E., mc Atlanta P. & S. 11, recip. Ga. 18, Anniston.
O'Connell, George A., mc Tulane 05, sb 07, Anniston.
Paine, Charles H., Jr., mc Emory 41, recip. Ga. 46, Anniston.
Planck, Ernest H., Jr., mc Tulane 37, recip. La. 38, Anniston.
Posey, James F., mc Emory 17, sb 18, Anniston.
Rayfield, John Dexter, mc Tenn. 34, recip. Tenn. 37, Jacksonville.
Salter, Wilbur M., mc Ala. 07, cb Conecuh 07, Anniston.
Sellers, Neil E., mc Ala. 05, sb 05, Anniston.
Spearman, George Knox, mc Vanderbilt 31, sb 31, Anniston.
Stough, Warren V., mc Univ. Chicago 42, sb 43, Anniston.
Van Sant, John W., mc Georgia Eclectic 04, cb Marshall 06, Piedmont.
Van Sant, Thomas E., mc Tenn. 31, recip. Tenn. 32, Piedmont.
Watson, Jerre, mc Ala. 16, sb 16, Anniston.
Weaver, Frank C., mc Ala. 13, sb 13, Anniston.
White, William E., mc Harvard 37, sb 38, Anniston.
Whiteside, Hamlin B., mc Ala. 10, sb 10, Ohatchee.

Whiteside, John M., mc Vanderbilt 84, cb 84, Anniston (Retired).
Williams, James, mc Ala. 10, sb 10, Jacksonville.
Woodruff, Gerald G., mc Tulane 20, sb 20, Anniston.
Woolf, Jos. H., mc Ill. 27, sb 27, Piedmont.
Total 40

PHYSICIANS NOT MEMBERS

Hunt, James Edgar, mc Univ. Ga. 04, recip. Ga. 45, Ordnance Depot, Anniston.
Jackson, Fred D. (col.), mc Meharry 14, sb 14, Anniston.
Meharg, Robert L., mc Ala. 06, cb 06, Alexandria.
Rodgers, Gordon A. (col.), mc Meharry 08, sb 07, Anniston.
Total 4

(9) CHAMBERS COUNTY

Montgomery 1881

President—S. C. Simmons Fairfax
Vice-President—W. G. Wood Lafayette
Secretary-Treasurer—H. S. Weldon Lanett
County Health Officer—W. H. Riser Lafayette

Censors—M. C. Hunt, Chairman, Fairfax; A. B. Lee, Lanett; W. L. Marshall, Langdale; J. H. Moore, Lafayette; W. H. Riser, Lafayette.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Auston, Paul W., mc Univ. Pa. 29, sb 30, Shawmut.
Cowles, Wm. L., mc Va. 08, recip. Va. 21, Shawmut.
Ferguson, Andrew D., mc Emory 38, recip. Ga. 46, Shawmut.
Frazer, Ben F., mc Tulane 14, sb 15, Lafayette.
Gaines, William D., mc Ala. 92, cb 92, State Prison Hosp., Atmore.
Hunt, M. C., mc Tulane 23, sb 23, Fairfax.
Lee, Aubrey Bernard, mc Vanderbilt 32, sb 32, Lanett.
Marshall, W. L., mc P. & S. Atlanta 06, cb Randolph 06, Langdale.
Moore, James Henry, mc Emory 97, recip. S. C. 42, Lafayette.
Morrow, R. P., mc Ala. 11, sb 11, West Point, Ga.
Perley, A. I., mc Rush 35, sb 36, Mass. Gen Hosp., Boston.
Riser, William H., mc Ala. 08, sb 07, Lafayette.
Simmons, Shelton C., Jr., mc Emory 38, recip. Ga. 45, Fairfax.
Weldon, Howard S., mc S. C. 40, sb 41, Lanett.
Wheeler, N. A., mc Atlanta P. & S. 07, cb 07, Lafayette.
Wheeler, N. A., Jr., mc Emory 39, recip. Ga. 40, Lafayette.
Wood, William Gross, mc Emory 41, sb 42, Lafayette.
Total 17

PHYSICIANS NOT MEMBERS

Calhoun, Samuel James, mc Ala. 15, sb Ga. 17, Langdale.
Haralson, Thomas H., mc Memphis Hosp. 99, cb Tallapoosa 99, Cusseta.
Total 2

HONORARY MEMBERS

Byrd, Mark M., mc Emory 25, sb Ga. 25, West Point.
McCulloh, Hugh, Jr., mc Emory 25, sb Ga. 25, West Point.
Morgan, James Calvin, mc Ala. 14, sb 16, West Point.
Williams, Chas. O., mc Atlanta P. & S. 06, sb Ga. 06, West Point.

(10) CHEROKEE COUNTY

Tuscaloosa 1887

President—W. J. Campbell Center
Vice-President—W. W. White Center

Secretary-Treasurer—S. C. Tatum Center
County Health Officer—Samuel C. Tatum Center

Censors—S. C. Tatum, Chairman, Center; W. J. Campbell, Center; W. W. White, Center.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Campbell, William J., mc Tenn. 31, sb 31, Center.
Tatum, Samuel Carter, mc Vanderbilt 93, cb 93, Center.
White, William Walden, mc Emory 24, recip. Ga. 25, Center.

Total 3

PHYSICIANS NOT MEMBERS

None

(11) CHILTON COUNTY

Selma 1879

President—C. O. Lawrence Clanton
Vice-President—C. R. Moore Clanton
Secretary-Treasurer—J. H. Johnson Clanton
County Health Officer—E. M. Moore* Clanton

Censors—W. C. Golden, Chairman, Clanton; C. R. Moore, Clanton; C. O. Lawrence, Clanton; H. G. Franklin, Thorsby; J. W. Moore, Clanton.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Day, Edward, mc Tulane II, sb 16, Maplesville.
Eiland, John Daniel, mc Univ. Nashville II, sb 12, Verbena.
Eiland, Robert John, ng, sb 07, Clanton.
Franklin, Horace G., mc Louisville 30, sb 30, Thorsby.
Golden, William C., mc LSU 34, recip. Miss. 37, Clanton.
Hayes, Julius Poe, mc Memphis Hosp. 96, cb 96, Clanton.
Johnson, Joe H., mc Vanderbilt 43, recip. Tenn. 46, Clanton.
Lawrence, Claud O., mc Emory 17, sb 17, Clanton.
Moore, Charles R., mc Tulane 35, sb 35, Clanton.
Moore, Joseph Watts, mc Tulane 41, sb 42, Clanton.
Parnell, Charles Nicholas, mc Ala. 91, cb 91, Maplesville.
Strock, Charles Stewart, mc Vanderbilt 04, cb 04, Verbena.

Total 12

PHYSICIANS NOT MEMBERS

None.

(12) CHOCTAW COUNTY

Selma 1879

President—W. J. Barber Butler
Vice-President—H. W. Robinson Edna
Secretary-Treasurer—T. M. Littlepage Butler
County Health Officer—T. M. Littlepage Butler

Censors—H. W. Robinson, Chairman, Edna; R. W. Shaw, Gilbertown; W. J. Barber, Butler; T. M. Littlepage, Butler; J. W. Rudder, Toxey.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Allen, Ralph H., mc Atlanta I4, sb 27, Silas.
Barber, William J., mc Tulane 29, sb 29, Butler.
Gully, Virgil S., mc Tulane 38, recip. La. 42, Butler.
Littlepage, Thos. M., mc Ala. 04, cb 04, Butler.
Miller, Samuel T., mc Ala. 01, cb Greene 04, Yantley.
Robinson, Henry W., mc Memphis Hosp. 01, cb 01, Edna.
Rudder, John W., mc Univ. Nashville 07, cb 07, Toxey.
Shaw, Rowell Wilbur, mc Memphis Hosp. 00, cb Washington 00, Gilbertown.

Total 8.

*See also Autauga County.

PHYSICIANS NOT MEMBERS

Elliott, Thomas C., mc Tulane 37, sb 37, Butler.
Total 1

(13) CLARKE COUNTY

Greenville 1885

President—R. D. Neal Grove Hill
Vice-President—W. S. Chapman Jackson
Secretary-Treasurer—C. P. St. Amant Grove Hill
County Health Officer—R. D. Neal (Act.) Grove Hill

Censors—W. S. Chapman, Chairman, Jackson; J. C. Godbold, Whatley; L. W. Chapman, Jackson; R. D. Neal, Grove Hill; J. S. Davidson, Thomasville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Bedsole, James Goodman, mc Vanderbilt 11, sb II, Jackson.
Chapman, Leland W., mc Ala. 11, sb 11, Jackson.
Chapman, Will Stewart, mc Emory 24, sb 24, Jackson.
Davidson, James S., mc Tulane 29, recip. La. 39, Thomasville.
Dozier, Slater M., mc Tulane 42, sb 42, Fulton.
Godbold, John Cooper, Jr., mc Ala. II, sb II, Whatley.
Irons, Richard Allen, mc Emory 24, sb 24, Thomasville.
King, Robert T., mc Univ. Pa. 44, sb 45, Jackson.
McCrary, Gaines C., mc Ala. 07, sb 07, Jackson.
Neal, Ralph Dewey, mc Emory 23, recip. Ga. 24, Grove Hill.
Nichols, Cobb, mc Ala. 98, cb 01, Carlton.
Pugh, John T., mc Vanderbilt 97, cb 97, Grove Hill.
Shaw, Robert E., mc Ala. 98, sb 99, Whatley.
St. Amant, Chester P., mc LSU 44, recip. La. 46, Grove Hill.

Total 14

PHYSICIANS NOT MEMBERS

None.

(14) CLAY COUNTY

Selma 1879

President—B. A. Stephens Lineville
Vice-President—A. H. Owens, Jr. Ashland
Secretary-Treasurer—J. S. Gay Ashland
County Health Officer—B. A. Stephens (Act.) Ashland

Censors—A. H. Owens, Jr., Chairman, Ashland; J. W. Jordan, Ashland; B. A. Stephens; Lineville; J. L. Hilt, Lineville; J. S. Gay, Ashland.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Gay, Jas. S., mc Ala. 05, cb 05, Ashland.
Hilt, John L., mc Atlanta Sou. 89, cb 89, Lineville.
Jordan, Joseph Wiley, mc Atlanta 91, cb 87, Ashland.
Owens, Arthur H., mc Ala. 05, cb 05, Ashland.
Owens, Arthur H., Jr., mc Tulane 39, recip. Minn. 46, Ashland.
Stephens, Burrell Anderson, mc Ala. 92, cb 92, Lineville.

Total 6

PHYSICIANS NOT MEMBERS

Killgore, James J., mc Memphis Hosp. 01, cb 01, Wadley.
Total 1

(15) CLEBURNE COUNTY

Selma 1884

President—L. R. Wright Heflin
Vice-President—A. N. Taylor Heflin
Secretary-Treasurer—F. R. Wood Heflin
County Health Officer—G. A. O'Connell* Heflin

*See also Calhoun County.

Censors -L. R. Wright, Chairman, Heflin; F. R. Wood, Heflin; A. N. Taylor, Heflin.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Dorough, John L., mc Okla. 15, recip. Okla 21, DeKalb, Miss.
Taylor, Arabion N., mc Northwestern 43, recip. Cal. 46, Heflin.
Wood, Frank Richard, mc Chattanooga 01, cb Randolph 01, Heflin.
Wright, Lee Roy, mc Univ. Nashville 00, cb 00, Heflin.
Total 4

PHYSICIANS NOT MEMBERS

None.

(16) COFFEE COUNTY
Greenville 1885

President—J. M. Kimmey Elba
Vice-President—J. T. Grimes Enterprise
Secretary-Treasurer—J. S. DuBois Enterprise
County Health Officer—G. L. Weidner Elba

Censors—C. P. Hayes, Chairman, Elba; E. L. Gibson, Enterprise; D. A. Bush, New Brockton; B. F. Thrower, Enterprise; E. G. Bragg, Jack.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Bragg, Eugene G., mc Ala. 14, sb 15, Victoria (mall Jack).
Braswell, William Cicero, mc Tulane 09, sb 09, Elba.
Bush, David A., mc Ala. 07, sb 07, New Brockton.
Crook, William Randolph, mc Chattanooga 02, cb 02, Elba.
DuBois, James S., mc Tulane 37, sb 37, Enterprise.
Gibson, Edward Lee, mc Ala. 13, sb 13, Enterprise.
Grimes, James T., mc Cornell 43, recip. Mich. 46, Enterprise.
Harrison, King William, mc Ala. 96, cb Lowndes 97, Enterprise.
Hayes, Charles Phillip, mc Louisville 06, cb Houston 06, Elba.
Kimmey, John Mason, mc Emory 28, sb 28, Elba.
Massey, Bartlett Jones, mc Ala. 03, sb Jefferson 03, Enterprise.
Thrower, Benjamin Franklin, mc Ala. 11, sb 12, Enterprise.
Weidner, Garland L., mc Univ. Louisville 27, recip. Ky. 42, Elba.
Total 13

PHYSICIANS NOT MEMBERS

Fussell, James A., mc Tenn. 25, recip. Tenn. 26, New Brockton.
Total 1

(17) COLBERT COUNTY
Montgomery 1881

President—Robin Lyles Leighton
Vice-President—D. D. Cox Sheffield
Secretary-Treasurer—R. E. Harper Tusculmbia
County Health Officer—R. E. Harper Tusculmbia

Censors—W. H. Blake, Jr., Chairman, Sheffield; W. M. Pierce, Tusculmbia; G. F. Littlepage, Sheffield; R. E. Gary, Tusculmbia; W. R. Trapp, Tusculmbia.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Blake, Wyatt Heflin, Jr., mc Vanderbilt 21, sb 21, Sheffield.
Brackin, Odie D., mc Univ. Ark. 40, recip. Ark. 41, Tusculmbia.
Cox, D. D., mc Rush 29, sb 31, Sheffield.
Finley, William Albert, ng, sb 09, Cherokee.

Gary, Loren, Jr., mc Univ. Ga. 32, recip. Ga. 41, Tusculmbia.

Gary, Robert Eugene, mc Univ. Ga. 32, recip. Ga. 37, Tusculmbia.

Griffith, Howard Asa, mc Ala. 07, cb Jefferson 07, Sheffield.

Harper, Robt. Edwin, mc S. C. 25, recip. S. C. 28, Tusculmbia.

Littlepage, George Frederick, mc Tulane 09, sb 07, Sheffield.

Lyles, Robin, mc Univ. Tenn. 36, recip. Tenn. 46, Leighton.
Maxwell, Walter J., mc Univ. South 01, cb Tuscaloosa 01, Sheffield.

McGrath, William Edward, mc Ala. 20, sb 20, Sheffield.
Pierce, William M., mc Memphis Hosp. 03, cb Cullman 04, Tusculmbia.

Trapp, Walter R., mc Emory 32, recip. Miss. 33, Tusculmbia.

Whitman, Clayborne Russell, mc Ala. 09, sb 09, Tusculmbia.

Wright, Rufus Denson, mc Tenn. 29, sb 29, Sheffield.

Total 16

PHYSICIANS NOT MEMBERS

Palmer, Chas. R., mc Tenn. 15, sb 15, Sheffield. (Retired.)
Ruffin, W. L. (col.), mc Leonard 10, cb Montgomery 10, Sheffield.
Total 2

(18) CONECUH COUNTY
Selma 1879

President—R. W. Stallworth Evergreen
Vice-President—R. W. Hendrix Evergreen
Secretary-Treasurer—R. L. Yeargan Evergreen
County Health Officer—R. L. Yeargan, Jr., (Act.) Evergreen

Censors—J. W. Hagood, Chairman, Evergreen; E. L. Stallworth, Evergreen; U. L. Jones, Brooklyn; R. W. Stallworth, Evergreen; W. R. Carter, Repton.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Carter, William Robert, mc Emory 24, sb 24, Repton.
Hagood, John W., mc Ala. 98, cb Lowndes 98, Evergreen.
Hendrix, R. Walker, mc Tulane 33, recip. La. 34, Evergreen.
Hollingsworth, Pryor L. mc Memphis Hosp. 99, recip. Ga. 45, Belleville.
Jones, Urban Louis, mc Missouri 04, cb Geneva 04, Brooklyn.
Kelly, Edward Lamar, mc Ala. 00, cb 00, Repton.
Stallworth, Emmet Lemuel, mc Ala. 94, cb 94, Evergreen.
Stallworth, Robert W., mc Emory 29, sb 29, Evergreen.
Yeargan, Reagan L., Jr., mc Emory 43, recip. Ga. 46, Evergreen.
Total 9

PHYSICIANS NOT MEMBERS

None

(19) COOSA COUNTY
Birmingham 1883

President—E. Argo Goodwater
Secretary-Treasurer—W. H. Goff Rockford
County Health Officer—C. S. Cotlin* Rockford

Censors—W. H. Goff, Chairman, Rockford; Eugene Argo, Goodwater.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Argo, Eugene, mc Vanderbilt 91, cb 91, Goodwater.

*See also Elmore County.

Goff, William Hunter, mc Vanderbilt 35, recip. Tenn. 38, Rockford.
Total 2

PHYSICIANS NOT MEMBERS

Pipes, James Lee, mc Univ. Louisville 38, recip. Ky. 46, Goodwater.
Total 1

(20) COVINGTON COUNTY

Montgomery 1888

President—J. G. Dunn, Jr. Opp
Vice-President—C. N. Matthews Florida
Secretary-Treasurer—C. D. McLeod Andalusia
County Health Officer—C. D. McLeod Andalusia

Censors—C. H. Chapman, Chairman, Andalusia; H. W. Waters, Opp; G. L. Wood, Andalusia; J. H. Kyzar, Andalusia; C. N. Matthews, Florida.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Campbell, Daniel J., mc Miss. 09, sb 09, Dozier, RFD.
Chapman, Charles Hicks, mc Tulane 09, sb 09, Andalusia.
Dunn, James G., Jr., mc Emory 40, recip. 46, Opp.
Evers, Ray, mc Vanderbilt 38, recip. Tenn. 40, Andalusia.
Galloway, Fletcher W., mc Memphis Hosp. 03, cb Houston 03, Florida.
Hamner, Samuel C., mc Ala. 09, sb 10, Andalusia.
Holley, J. F., mc Emory 22, sb 22, Lockhart.
Hurst, John C., mc Emory 25, sb 25, Opp.
Kyzar, J. H., mc Tulane 13, sb 13, Andalusia.
MacLennan, Edward R., mc Emory 35, recip. Ga. 36, Opp.
Matthews, Clifford N., mc Long Island 42, sb 43, Florida.
McDonald, Juanita Bolton, mc Woman's Med. Col. of Pa. 41, sb 42, Andalusia.
McLeod, Coleman D., mc S. C. 33, sb 34, Andalusia.
O'Neal, J. Paul, mc Baylor 39, recip. Texas 46, Andalusia.
Parker, Lorenzo Dowe, mc Ala. 01, cb 01, Andalusia.
Parker, Leslie L., mc LSU 40, recip. La. 41, Andalusia.
Ray, Elgin A., mc Tulane 27, sb 27, Andalusia.
Waters, Hinton W., mc Ala. 13, sb 13, Opp.
Winters, Henry B., mc St. Louis P. & S. 06, recip. Ark. 25, Red Level.
Wood, Gordon L., mc Ala. 11, sb 11, Andalusia.
Woodley, Lawrence S., mc Tulane 37, sb 37, Andalusia. (S.)
Young, Ferrin, mc Vanderbilt 09, sb 09, Florida.
Total 22

PHYSICIANS NOT MEMBERS

Dowdy, Robert W., mc Tenn. 91, cb Randolph 91, Opp, Rt. 3.
Ham, Nelson M., mc Ala. 98, cb Coffee 98, Opp, Rt. 3.
Total 2

(21) CRENSHAW COUNTY

Mobile 1882

President—L. A. Windham Luverne
Vice-President—J. W. Davidson Brantley
Secretary-Treasurer—J. O. Foster Luverne
County Health Officer—Jas. O. Foster Luverne

Censors—J. W. Davidson, Chairman, Brantley; H. S. Abercrombie, Petrey; F. J. Lee, Luverne; L. A. Windham, Luverne; M. L. Watkins, Glenwood.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Abercrombie, Henry S., ng, sb 98, Petrey.
Davidson, James W., mc Chattanooga 06, recip. Tenn. 24, Brantley.
Ford, Julian C., mc P. & S. St. Louis 96, cb 96, Luverne.
Foster, James Oscar, mc P. & S. Atlanta 06, cb 06, Luverne.

Kendrick, James Evans, mc Northwestern 42, recip. Ga. 47, Luverne.

Lee, Frank J., mc Ala. 08, sb 08, Luverne.

Malouf, George M., mc Univ. Vt. 28, recip. Vt. 45, Brantley.

Ray, James C. mc Washington Univ. 42, recip. Mo. 47, Luverne.

Watkins, Martin L., mc Vanderbilt 99, cb 99, Glenwood.

Windham, Lewis A., mc Atlanta 16, sb 16, Luverne.

Total 10

PHYSICIANS NOT MEMBERS

Bell, Walter Houston, mc Univ. Nashville 06, cb 06, Dozier.
Total 1

(22) CULLMAN COUNTY

Anniston 1886

President—Frank Stitt Cullman
Vice-President—R. M. Gross Cullman
Secretary-Treasurer—M. S. Whiteside Cullman
County Health Officer—M. S. Whiteside Cullman

Censors—R. A. Culpepper, Chairman, Cullman; J. C. Martin, Cullman; F. C. Stitt, Cullman; E. D. McAdory, Cullman; R. B. Dodson, Cullman.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Beatty, Thomas D., mc Rush 36, recip. Wis. 39, Cullman.
Camp, William A., mc Emory 41, sb 41, Cullman.
Cornelius, L. B., mc Ala. 12, sb 13, Cullman, Rt. 5.
Culpepper, Rufus Alva, mc Chicago M. & S. 14, sb 15, Cullman.
Daves, James G., mc Emory 20, sb 20, Cullman.
Dodson, Robert Bruce, mc Ala. 13, sb 13, Cullman.
Gross, Chas. M., mc Ala. 08, sb 08, Cullman, Rt. 3.
Gross, Robert Merrill, mc Tenn. 41, recip. Tenn. 43 Cullman.
Herrin, Charles Edward, mc Chattanooga 02, cb 02, Cullman.
Hughes, Virgil P., mc Emory 26, sb 26, Cullman.
Markheim, Herbert, mc New York 38, NBE 40, Johns Hopkins Hosp., Baltimore.
Martin, James Cordie, mc Chattanooga 05, cb Morgan 05, Cullman.
McAdory, Edward Dudley, mc Ala. 14, sb 15, Cullman.
Rowe, George T., mc Loyola 28, sb 29, Hanceville.
Sandlin, E. G., mc Vanderbilt 07, sb 06, Holly Pond.
Stitt, Frank C., mc Univ. Ark. 28, sb 28, Cullman.
Whiteside, M. S., mc Tulane 20, sb 20, Cullman.
Wood, James W., mc P. & S. Atlanta 97, cb Clay 97, Hanceville.
Total 18

PHYSICIANS NOT MEMBERS

Graf, Charles Christopher, mc Ala. 13, sb 14, Steppville. (Retired.)
Hale, Prior, old law, cb Morgan 80, Vinemont, Rt. 2. (Retired.)
Head, Walter H., mc Tulane 24, recip. La. 27, Cullman.
Winn, John Thomas, mc Tenn. 93, cb 93, Cullman. (Retired.)
Total 4

(23) DALE COUNTY

Tuscaloosa 1887

President—G. R. Smith Ozark
Vice-President—A. D. Matthews Ozark
Secretary-Treasurer—W. L. Orr Ozark
County Health Officer—W. L. Orr Ozark

Censors—W. A. Parrish, Chairman, Midland City; Moses McGhee, Daleville; H. C. Stovall, Pinckard; A. D. Matthews, Ozark; G. R. Smith, Ozark.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Holman, Norman Willard, mc Emory 35, recip. Ga. 36,
Ozark.
Matthews, Augustus Douglas, mc Ala. 11, sb 13, Ozark.
McGhee, Moses, mc Atlanta 98, cb Henry 06, Daleville.
Orr, William Lucius, mc Baltimore 04, recip. Ga. 30,
Ozark.
Parrish, William A., mc Univ. Nashville 09, sb 10, Mid-
land City.
Smith, Gordon Roysce, mc Tulane 21, sb 21, Ozark.
Stovall, H. C., mc Atlanta 08, sb 09, Pinckard.
Total 7

PHYSICIANS NOT MEMBERS

Espy, Curtis, mc Univ. South 04, cb Henry 04, Midland
City.
Lister, Robert H., mc Ala. 16, sb 16, Ozark.
Total 2

(24) DALLAS COUNTY
Montgomery 1875

President—J. H. Smith Selma
Vice-President—J. F. Alison Selma
Secretary-Treasurer—L. T. Lee Selma
County Health Officer—L. T. Lee Selma

Censors—D. H. Doherty, Chairman, Selma; J. P. Chap-
man, Selma; J. F. Alison, Selma; G. T. Edwards, Selma,
Rt. 1; W. F. Harper, Selma.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Alison, James Fairly, mc Tulane 23, sb 23, Selma.
Alison, Samuel Blakemore, mc Ky. 89, cb 93, Minter.
Armstrong, James Harris, mc Tulane 37, recip. Miss. 46,
Selma.
Bayne, Rembert D., mc Tulane 27, sb 27, Selma.
Blackburn, Cecil H., mc Wash. Univ. 41, recip. Mo. 46,
Selma.
Caine, V. H., mc Ala. 92, cb Wilcox 92, Orrville.
Callaway, Eugene, mc Univ. Va. 04, Bellevue 05, sb 10,
Selma.
Chapman, Jesse P., mc Ala. 12, sb 12, Selma.
Chisolm, Jos. Raymond, mc Tulane 16, recip. La. 23,
Marion Junction.
Chisolm, Robert Patrick, mc Ala. 93, cb 93, Selma, Rt. 4.
DeRamus, William Henry, mc Tulane 31, recip. La. 36,
Selma.
Doherty, Drayton H., mc Johns Hopkins 15, sb 15, Selma.
Edwards, Daniel B., mc Ala. 98, cb 98, Tyler, RFD.
Edwards, Geo. Traylor, mc Ala. 12, sb 12, Selma, Rt. 1.
Ehlert, Wm. Emile, mc Tulane 38, recip. La. 42, Selma.
Feulner, Charles Daniel, mc Ky. 05, sb 06, Selma.
Grayson, Richard J., mc Tulane 26, sb 26, Selma.
Harper, William Frantz, mc Harvard 22, sb 23, Selma.
Hermann, Robert Charles, mc Univ. Texas 38, recip.
Texas 45, Selma.

Howell, Julian P., mc Tulane 35, sb 35, Selma.
Kenan, James, mc Univ. Va. 97, cb 04, Selma.
Kirkpatrick, Samuel McCurdy, mc Tulane 29, sb 29,
Selma.
Lee, Lucien Tennent, mc Ala. 04, cb Barbour 04, Selma.
Long, Randolph N., mc Tulane 35, recip. La. 37, Selma.
Luckie, Kenneth Earl, mc Tulane 27, sb 27, Selma.
Martin, Thomas Marion, mc Vanderbilt 99, cb Chilton 99,
Plantersville.
Mason, David A., mc Md. 04, sb 04, Selma.
Moore, Lawrence Henry, mc Ala. 01, cb 01, Orrville.
Moseley, Samuel O., mc Tulane 20, sb 21, Selma.
Pilkington, John Shelton, mc Univ. Tenn. 42, recip. Tenn.
46, Selma.
Schmitz-Dumont, Isabella M., mc Woman's Med. Col.,
Pa., 39, recip. Pa. 44, Selma.
Skinner, Marcus M., mc Ala. 12, sb 12, Selma.

Smith, Josiah H., mc Johns Hopkins 31, recip. Md. 40,
Selma.
Stuart, Wm. W., mc Ky. 94, cb Wilcox 94, Selma, Rt. 1.
Wallace, Archibald D., mc Memphis Hosp. 07, cb Autau-
ga 07, Plantersville.
Williams, J. Richard, mc Tulane 31, sb 31, Selma.
Total 36

PHYSICIANS NOT MEMBERS

Chisolm, James Satterfield, mc Tulane 05, cb 06, Selma.
Dinkins, Pauline (col.), mc Woman's, Pa. 19, sb 19, Selma.
Patton, Madison Knox, mc Tulane 91, cb Greene 91,
Selma. (Retired.)
Walker, Nathaniel D. (col.), mc Leonard 13, sb 15, Selma.
Total 4

(25) DeKALB COUNTY
Greenville 1895

President—C. D. Killian Ft. Payne
Vice-President—Briggs Parris Geraldine
Secretary-Treasurer—O. F. Gay Ft. Payne
County Health Officer—O. F. Gay Ft. Payne

Censors—R. J. Guest, Jr., Chairman, Ft. Payne; William
Noble, Ft. Payne; G. I. Weatherly, Ft. Payne; Briggs
Parris, Geraldine; C. B. Richey, Collinsville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Buzbee, J. E., mc Ala. 08, sb 10, Ft. Payne.
Casey, M. L., mc Chattanooga 01, cb Marshall 01, Henagar.
Chitwood, John N., mc Hahnemann 43, recip. Ga. 46, Ft.
Payne.
Gaines, John L., mc Jefferson 44, sb 47, Crossville.
Gay, Otis Franklin, mc Tulane 35, recip. La. 38, Ft. Payne.
Guest, Reuben John, Jr., mc Emory 31, recip. Ga. 32, Ft.
Payne.
Hansard, William Simeon, mc Chattanooga 07, cb 07, Hen-
agar, RFD.
Killian, Claud Dallas, mc Ala. 13, sb 14, Ft. Payne.
Marsh, Jos. S., mc Chicago M. & S. 17, sb 18, Collinsville.
Noble, William, mc Emory 28, recip. Cal. 40, Ft. Payne.
Parris, Briggs, mc Tenn. 13, sb 14, Geraldine.
Richey, Carl B., Jr., mc Long Is. 42, sb 43, Collinsville.
Richey, Clinton H., mc Louisville 29, recip. Tenn. 31, Val-
ley Head.
Weatherly, George I., Jr., mc Tulane 40, sb 41, Ft. Payne.
Wilson, Dilimus Wesley, mc Chattanooga 00, cb Marshall
01, Ft. Payne.
Total 15

PHYSICIANS NOT MEMBERS

Cantrell, Wilson T., mc Ky. 06, cb Marion 06, Valley Head.
Haggard, Daniel Carr, mc Chattanooga 10, recip. Tenn.
20, Sylvania.
Total 2

(26) ELMORE COUNTY
Birmingham 1877

President—E. O. Majure Tallassee
Vice-President—E. G. Moore Tallassee
Secretary-Treasurer—C. S. Cotlin Wetumpka
County Health Officer—C. S. Cotlin Wetumpka

Censors—J. F. Sewell, Chairman, Wetumpka; W. M.
Owsley, Eclectic; G. L. Gresham, Speigner; W. A. Ed-
wards, Wetumpka; E. O. Majure, Tallassee.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Corrington, Dale D., mc Rush 21, recip. Illinois 26, Tal-
lassee.

Cotlin, Chas. S., mc Tenn. 30, sb 31, Wetumpka.
 Dunn, Julius E., mc Univ. Louisville 33, recip. Ky. 36, Wetumpka.
 Edwards, Winston A., mc Tenn. 36, sb 37, Wetumpka.
 Gresham, George L., mc Tulane 05, cb Covington 05, Speigner.
 Lett, Ed. R., mc Louisville 05, cb 07, Tallassee.
 Majure, Ernest Odell, mc Emory 32, recip. Miss. 35, Tallassee.
 Moore, Ernest G., mc LSU 33, recip. La. 35, Tallassee.
 Owsley, W. M., mc Ala. 14, sb 14, Eclectic.
 Sewell, John Ferris, mc Vanderbilt 21, sb 21, Wetumpka.
 Total 10

PHYSICIANS NOT MEMBERS

Boswell, Franklin A., mc Ala. 00, cb Pike 00, Elmore.
 Harmon, James Samuel, mc Chattanooga 07, cb 07, Elmore. (License revoked Aug. 8, 1945.)
 Total 2

(27) ESCAMBIA COUNTY

Greenville 1886

President—V. Q. Rawls Brewton
 Vice-President—W. L. Abernethy Flomaton
 Secretary-Treasurer—A. J. Treherne Atmore
 County Health Officer—W. B. Nelson* Brewton

Censors—J. P. Stallworth, Chairman, Canoe; G. W. Salley, Atmore; V. Q. Rawls, Brewton; W. L. Abernethy, Flomaton; J. O. Lisenby, Atmore.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Abernethy, William Lordin, mc Ala. 94, cb Monroe 94, Flomaton.
 Clemmons, Lowell Henry, mc Rush 42, sb 43, Brewton.
 Goldsmith, Edward F., mc Tulane 34, sb 34, Atmore.
 Holley, Al Fonto, mc Louisville 33, recip. Ky. 35, Brewton.
 Lisenby, Jas. Otis, mc Tulane 25, recip. La. 27, Atmore.
 Marlette, Geo. C., mc Ala. 16, sb 16, New Orleans.
 Melton, Thomas Albert, mc LSU 40, sb 41, Atmore.
 Murphy, Iva G., mc Univ. Ill. 34, recip. Cal. 40, Alderson, W. Va.
 Rawls, Vance Q., mc Univ. Louisville 29, recip. Ky. 35, Brewton.
 Salley, Geo. W., mc Tenn. 03, cb Butler 03, Atmore.
 Stallworth, James Patrick, mc P. & S. Atlanta 07, cb 07, Canoe.
 Treherne, Alfred James, mc Louisville 32, recip. Ky. 35, Atmore.
 Total 12

PHYSICIANS NOT MEMBERS

Mason, Francis Henry, mc Ala. 91, cb Monroe 91, Brewton.
 McKinley, Charles F., mc Ala. 07, cb Monroe 07, Atmore.
 Peavy, Julius Franklin, Jr., mc Ala. 12, sb 12, Atmore.
 Phillippi, Frank M., Jr., mc Tulane 43, recip. La. 46, Brewton.
 Tippin, Philip Henry Mulcahy, mc Ala. 94, cb 94, Brewton.
 Total 5

(28) ETOWAH COUNTY

Eufaula 1878

President—Alfred Carraway Gadsden
 Vice-President—H. G. Ford Gadsden
 Secretary-Treasurer—W. E. Meneray Gadsden
 County Health Officer—C. A. F. Hbller Gadsden

*See also Baldwin County.

Censors—W. L. Miller, Chairman, Gadsden; J. L. Brown, Gadsden; J. S. Bobo, Gadsden; O. R. Grimes, Gadsden; J. T. Sheppard, Gadsden.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Anderson, William, mc Memphis Hosp. 06, sb 05, Glencoe, Rt. 2.
 Anderson, William O. mc Univ. Ark. 38, recip. Ark. 39, Gadsden.
 Adkins, Hezekiah, mc Univ. Louisville 41, recip. Ky. 46, Gadsden.
 Bass, Herschel Winston, mc Johns Hopkins 06, sb 06, Gadsden.
 Bass, John B., mc Johns Hopkins 38, recip. Md. 40, Gadsden.
 Beckert, Charles F. mc Tulane 43, recip. La. 47, Gadsden.
 Blair, Ezekiel S., mc Univ. Tenn. 10, recip. Tenn. 42, Gadsden.
 Bobo, James E., mc Tenn. 38, recip. Tenn. 40, Gadsden.
 Bobo, John S., mc Vanderbilt 24, recip. Tenn. 25, Gadsden.
 Brown, James M., mc Ala. 89, cb Montgomery 89, Gadsden.
 Brown, Joseph Lucien, mc P. & S. Baltimore 18, sb 19, Gadsden.
 Burns, Chas. R. D., mc Univ. Ark. 38, recip. Ark. 40, Alabama City.
 Campbell, Henry Arthur, mc Harvard 36, sb 46, Gadsden.
 Carraway, Alfred, mc Ala. 15, sb 22, Gadsden.
 Clark, Benjamin B., mc Univ. Okla. 34, recip. Okla. 37, Gadsden.
 Clark, Charles E., mc Columbia Univ. 43, NBE 46, Gadsden.
 Clark, Ralph Denson, mc Columbia 27, Nat. Bd. Ex. 30, Gadsden.
 Cross, Elias Howell, Jr., mc Vanderbilt 26, recip. Tenn. 27, Gadsden.
 Faucett, DeWitt, mc P. & S. Baltimore 09, sb 09, Gadsden.
 Faucett, George L., mc P. & S. Baltimore 03, cb 03, Gadsden.
 Finney, James O., mc Vanderbilt 33, recip. Tenn. 36, Gadsden.
 Ford, Henry Grady, mc Vanderbilt 23, sb 24, Gadsden.
 Ford, Joseph Wesley, mc Okla. 31, recip. Okla. 37, Gadsden.
 Frank, Herman W., mc Tulane 27, recip. La. 30, Gadsden.
 Frantz, William E., mc Tulane 37, recip. La. 39, Gadsden.
 Gafford, August V., mc Tulane 42, sb 43, Alabama City.
 Gillespie, J. P., Jr., mc Emory 27, recip. Ga. 29, Gadsden.
 Gipson, Amos C., mc Ill. 27, sb 27, Gadsden.
 Graves, Alex Wilson, mc Ala. 16, sb 16, Gadsden.
 Grimes, Ormond R., mc Emory 30, sb 30, Gadsden.
 Guice, Charles Lee, mc Grant 93, cb Dale 93, Gadsden.
 Hanby, Elmus K., mc Ala. 02, cb St. Clair 02, Attalla.
 Holler, Carl A. F., mc Northwestern 21, recip. Iowa 38, Gadsden.
 Hughes, Miles Preston, mc Vanderbilt 06, sb 05, Gadsden.
 Isbell, Euclid A., mc Tulane 33, sb 34, Gadsden.
 Kilpatrick, Lewis A. mc Ala. 09, sb 09, Gadsden.
 Lawson, Chas. Lloyd, mc Univ. Tenn. 36, recip. Tenn. 39, Gadsden.
 Lawson, Nettie Black, mc Univ. Tenn. 37, recip. Tenn. 40, Gadsden.
 Leach, James E., mc Univ. Nashville 00, cb Blount 00, Gadsden.
 Little, Edwin G., mc Ala. 05, sb 05, Gadsden.
 McCord, Bert, mc Northwestern 28, sb 29, Gadsden.
 McCorkle, Frank W., mc Jefferson 17, sb 17, Gadsden.
 McDiarmid, Thos. Scott, mc Ala. 09, sb 10, Gadsden.
 McElroy, James Mahlon, mc Univ. South 01, cb Sumter 02, Attalla.
 Meneray, Wilbur E., mc Tulane 37, recip. La. 43, Gadsden.
 Miller, William L., mc Johns Hopkins 23, Nat. Bd. Ex. 28, Gadsden.
 Morgan, J. Orville, mc Atlanta 16, sb 17, Gadsden.
 Murphree, Claud L., mc Ala. 02, cb 02, Birmingham.

Nicholson, Lemuel B., mc Vanderbilt 15, sb 17, Gadsden.
Owen, Hubert R., mc Northwestern 33, recip. Mich. 35, Gadsden.
Powell, H. B., mc Ala. 10, sb 10, Gadsden.
Ralls, Arthur W., mc P. & S. Atlanta 02, cb 02, Gadsden.
Rogers, Joseph H., mc Univ. Va. 39, recip. Va. 46, Gadsden.
Rowan, Walter William, mc Atlanta 15, sb 15, Attalla.
Rowe, Mercer, mc Ala. 17, sb 17, Gadsden.
Samuel, Ira J., mc Univ. Nashville 08, sb 14, Altoona.
Savage, Henry J., mc Tulane 01, cb Conecuh 02, Gadsden.
Shaddix, Marion L., mc Ala. 10, sb 10, Alabama City.
Sheppard, John T., mc Vanderbilt 29, recip. Tenn. 33, Gadsden.
Sigrest, Otho Randolph, mc Ala. 08, sb 08, Attalla.
Silvey, Gordon E., mc Tenn. 10, sb 10, Gadsden.
Smith, Robert Cathcart, mc Duke 30, NBE 46, Gadsden.
Stinson, Willie E., mc Emory 31, sb 31, Alabama City.
Total 63

PHYSICIANS NOT MEMBERS

Coffey, Geo. W. (col.), mc Howard 03, cb Lauderdale 06, Gadsden.
Gramling, Arthur B., mc Md. 04, cb 04, Attalla.
Gramling, James W. mc Ala. 01, cb Franklin 01, Gadsden.
Stewart, James Wellington (col.), mc Meharry 44, recip. Tenn. 45, Gadsden.
Towns, John Bunyon (col.), mc Meharry 23, sb 23, Gadsden.
Total 5

(29) FAYETTE COUNTY

Selma 1879

President—B. W. McNease Fayette
Secretary-Treasurer—J. H. Ashcraft Fayette
County Health Officer—J. H. Ashcraft Fayette

Censors—B. W. McNease, Chairman, Fayette; A. C. Branyon, Fayette; J. D. Scrivner, Berry; D. H. Wright, Berry; A. L. Blakeney, Newtonville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Anderson, Henry L., mc Tulane 39, sb 39, Huntsville.
Ashcraft, James Harvey, mc Ala. 05, cb Pickens 05, Fayette.
Blakeney, A. Lanthus, mc Grant 07, cb Lamar 07, Newtonville.
Branyon, A. Curt, mc Memphis Hosp. 03, cb Lamar 03, Fayette.
Hodo, Henry G., Jr., mc Univ. Pa. 40, sb 41, Fayette.
McNease, Benjamin W., mc Pa. 24, sb 25, Fayette.
Robertson, John Banks, mc Tulane 34, sb 35, Fayette.
Scrivner, J. D., mc Ala. 14, sb 14, Berry.
Stewart, Guy E., mc Ala. 04, cb Walker 04, Fayette.
Wright, David H., mc Vanderbilt 08, sb 08, Berry.
Total 10

PHYSICIANS NOT MEMBERS

Young, James D., mc Memphis Hosp. 94, cb Lamar 94, Fayette. (Retired.)
Total 1

(30) FRANKLIN COUNTY

Tuscaloosa 1887

President—W. E. Wilson Russellville
Vice-President—F. R. Underwood Red Bay
Secretary-Treasurer—N. P. Underwood Russellville
County Health Officer—N. P. Underwood Russellville
Censors—S. J. Snoddy, Chairman, Russellville; Z. L. Weatherford, Red Bay; T. J. Glasgow, Russellville; W. E. Wilson, Russellville; R. O. Underwood, Russellville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Burns, John Dowdy, mc Tenn. 26, sb 26, Russellville.
Clayton, Price, mc Tulane 27, sb 27, Russellville.
Frederick, Ralph H., mc Univ. Tenn. 31, recip. Tenn. 38, Red Bay.
Glasgow, Thomas Jefferson, mc Ala. 10, sb 10, Russellville.
Gresham, Walter Asa, mc Vanderbilt 00, cb 00, Russellville.
Snoddy, Samuel J., mc Emory 24, sb 24, Russellville.
Spruell, William Hugh, mc Tenn. 34, recip. Tenn. 35, Russellville.
Underwood, Andrew Jackson, mc Ala. 99, cb 01, Spruce Pine.
Underwood, Floyd R., mc Ala. 12, sb 12, Red Bay.
Underwood, Naomi Price, mc Grant 06, cb 06, Russellville.
Underwood, Oscar O., mc Chattanooga 04, cb 04, Phil Campbell.
Underwood, Ralph O., mc Tenn. 42, recip. Tenn. 46, Russellville.
Waldrep, Archie C., mc Louisville 93, cb 93, Red Bay.
Weatherford, Zadoc L., mc Tenn. 14, sb 16, Red Bay.
Wilson, William E., mc Tulane 24, recip. Tenn. 26, Russellville.
Total 15

PHYSICIANS NOT MEMBERS

None

(31) GENEVA COUNTY

Montgomery 1888

President—J. W. Beasley Geneva
Secretary-Treasurer—E. T. Brunson Samson
County Health Officer—G. L. Weidner* Geneva

Censors—I. L. Johnston, Chairman, Samson; H. K. Tipples, Geneva; J. W. Beasley, Geneva; H. C. Riley, Coffee Springs.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Beasley, James W., mc Ala. 96, cb Pike 96, Geneva.
Brunson, Emmett T., mc Emory 21, sb 21, Samson.
Johnston, Ira L., mc Memphis Hosp. 03, cb Pike 03, Samson.
Paul, William Gordon, mc Univ. Okla. 39, recip. Okla. 46, Geneva.
Riley, Henry Clayton, mc Memphis Hosp. 03, cb Henry 03, Coffee Springs.
Stephens, Dudley D., mc Ala. 95, cb Dale 95, Slocomb.
Tankersley, Ernest, mc Louisville 07, cb Crenshaw 07, Samson.
Tippins, Henry K., mc Chicago P. & S. 08, sb 08, Geneva.
Tippins, James R., mc Chicago P. & S. 12, sb 14, Hartford.
Vaughan, Angus Edwin, mc Louisville 05, cb 05, Geneva, Rt. 2.
Williams, Keller Bell, mc Univ. South 07, sb 08, Hartford.
Total 11

PHYSICIANS NOT MEMBERS

Fleming, John C., mc Ala. 91, cb 95, Hartford.
Townsend, Alfred L., mc Univ. Nashville 99, cb Pike 99, Hartford.
Total 2

(32) GREENE COUNTY

Selma 1879

President—D. H. Trice Boligee
Vice-President—J. P. Smith Eutaw
Secretary-Treasurer—J. D. Smith Eutaw
County Health Officer—S. J. Williams† Eutaw

*See also Coffee County.

†See also Sumter County.

Censors—D. H. Trice, Chairman, Boligee; H. B. Klie, Forkland; J. P. Smith, Eutaw; R. S. Lucius, Eutaw; J. D. Smith, Eutaw.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Klie, H. B., mc Tulane 00, cb Marengo 00, Forkland.
Lucius, Richard Spurgeon, mc P. & S. Atlanta 04, cb 04, Eutaw.
Smith, James Donald, mc N. Y. Univ. 36, recip. N. Y. 38, Eutaw.
Smith, Joe P., mc Emory 34, recip. Miss. 36, Eutaw.
Trice, Daniel Hall, mc Louisville 03, cb Choctaw 03, Boligee.
Weissinger, William J., mc Tulane 11, sb 11, Eutaw.

Total 6

PHYSICIANS NOT MEMBERS

Legare, Julien Kent, mc Univ. N. Y. 86, cb 87, Forkland.
Moore, George Amos, mc Ala. 90, cb Wilcox 90, Eutaw.
Thetford, Samuel Lewis, mc Tulane 06, sb Louisiana 06, Boligee.

Total 3

(33) HALE COUNTY

Montgomery 1875

President—D. R. Ramey, Jr. Greensboro
Vice-President—T. J. Anderson Greensboro
Secretary-Treasurer—I. N. Jones Greensboro
County Health Officer—I. N. Jones Greensboro

Censors—E. T. Norman, Chairman, Greensboro; T. P. Abernathy, Moundville; D. R. Ramey, Jr., Greensboro; T. J. Anderson, Greensboro.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Abernathy, Thomas Pennie, mc Memphis Hosp. 99, cb 99, Moundville.
Anderson, Thos. J., mc Tulane 22, sb 22, Greensboro.
Jones, Isaac N., mc Ala. 09, sb 10, Greensboro.
Norman, Eldridge T., mc Emory 26, sb 26, Greensboro.
Ramey, Daniel R., Jr., mc Tenn. 36, recip. Tenn. 37, Greensboro.

Total 5

PHYSICIANS NOT MEMBERS

None.

(34) HENRY COUNTY

Montgomery 1833

President—C. T. Martin Headland
Vice-President—S. L. Burdeshaw Headland
Secretary-Treasurer—T. J. Floyd Abbeville
County Health Officer—T. J. Floyd (Act.) Abbeville

Censors—T. J. Floyd, Chairman, Abbeville; C. T. Jones, Newville; C. T. Martin, Headland; S. L. Burdeshaw, Headland; L. P. Shell, Abbeville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Burdeshaw, Shelby L., mc Univ. Nashville 08, sb 08, Headland.
Floyd, Thomas J., mc Tulane 07, cb Houston 07, Abbeville.
Jones, Carl T., mc Ala. 17, sb 17, Newville.
Martin, Carl T., mc Univ. Ga. 26, recip. Ga. 36, Headland.
Scott, Marvin, mc Ala. 05, cb 05, Headland.
Shell, James Robert, mc Tenn. 42, recip. Tenn. 43, Abbeville.

Shell, L. P., mc Vanderbilt 05, cb Butler 06, Abbeville.
Whigham, Arthur L., mc Ala. 10, sb 11, Newville.

Total 8

PHYSICIANS NOT MEMBERS

Scott, Walter, mc Atlanta 10, sb 14, Headland.
Total 1

(35) HOUSTON COUNTY

Talladega 1903

President—T. B. Woods Dothan
Vice-President—H. B. Burdeshaw Dothan
Secretary-Treasurer—W. T. Burkett Dothan
County Health Officer—W. T. Burkett Dothan

Censors—W. H. Turner, Chairman, Dothan; R. D. Crawford, Dothan; S. G. Latiolais, Dothan; F. G. Granger, Ashford; T. K. McFatter, Dothan.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Andress, David G., mc Chattanooga 04, cb Cullman 04, Madrid.
Bates, Irby Clyde, mc Ala. 11, sb 11, Dothan.
Burdeshaw, Henry B., mc Tulane 16, sb 19, Dothan.
Burkett, Wyatt Thomas, mc Tulane 09, sb 17, Dothan.
Campbell, James A., mc Okla. 15, sb 20, Dothan.
Cannady, Nicholas B., mc Jefferson 12, recip. N. C. 23, Dothan.

Chalker, Benjamin C., mc Georgia Eclectic 97, cb Geneva 97, Dothan.

Crawford, Robert D., Jr., mc Emory 30, pro forma USN 32, Dothan.

Ellis, John Thomas, mc Emory 16, sb 17, Dothan.
Flowers, James H., mc Baylor 05, cb 05, Newton, RFD.
Flowers, Paul Rutledge, mc Emory 39, recip. Ind. 43, Dothan.

Granger, Frank G., mc Atlanta P. & S. 12, sb 12, Ashford.
Haisten, Douglas C., mc Vanderbilt 28, sb 29, Dothan.
Hicks, Dorman Marvin, mc Louisville 06, cb Pike 06, Cottonwood.

Hilson, Lewis, mc P. & S. Atlanta 09, sb 09, Dothan.
Hopkins, Percy I., mc Johns Hopkins 09, cb Bibb 09, Dothan.

Keyton, J. Arthur, mc Tulane 16, sb 16, Dothan.
Latiolais, Sydney G., mc Tenn. 31, recip. Tenn. 35, Dotnan.
Mazyck, Arthur, mc Univ. Va. 31, recip. Va. 34, Dothan.
McFatter, Theron K., mc Tulane 29, recip. La. 31, Dothan.

Moody, Earl F., mc Tulane 03, sb 03, Dothan.
Thacker, Vincent J., mc Tulane 25, recip. La. 27, Dothan.
Turner, Wilson H., mc Northwestern 28, recip. Miss. 31, Dothan.

Woods, Thomas B., mc Tulane 33, sb 33, Dothan.
Windham, Samuel W., mc Washington Univ. 38, recip. Mo. 40, Dothan.

Yarbrough, John Fletcher, mc Atlanta 92, cb Henry 92, Montgomery.

Total 26

PHYSICIANS NOT MEMBERS

Boyd, Austin F., mc Ala. 13, sb 14, Dothan.
Dasher, John M. (col.), mc Meharry 29, recip. Ga. 40, Dothan.

Lanford, Walter B., mc Ala. 06, cb Crenshaw 06, Columbia.
Ryalls, William Mann, mc Atlanta 87, cb Henry 97, Ashford.

Total 4

(36) JACKSON COUNTY

Mobile 1882

President—E. L. Trammell Dutton
Vice-President—M. H. Lynch Scottsboro
Secretary-Treasurer—S. P. Hall Scottsboro
County Health Officer—Lee Weathington* Scottsboro

*See also Marshall County.

Censors—M. H. Lynch, Chairman, Scottsboro; G. E. Nye, Scottsboro; E. A. Browder, Stevenson; Rayford Hodges, Scottsboro; E. Julian Hodges, Scottsboro.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Browder, Ernest A., mc Tenn. 36, recip. Tenn. 37, Stevenson.
Hall, Samuel P., Jr., mc Univ. Ga. 34, recip. Ga. 36, Scottsboro.
Hartung, Carl F., Jr., mc Grant 06, cb Cullman 06, Bridgeport.
Hodges, E. Julian, mc Emory 34, sb 34, Scottsboro.
Hodges, Rayford, mc Ala. 15, sb 15, Scottsboro.
Lynch, M. H., mc S. C. 28, recip. S. C. 30, Scottsboro.
Nye, George E., mc Chattanooga 06, cb DeKalb 06, Scottsboro.
Trammell, Edward Lee, mc Tenn. 33, recip. Tenn. 34, Dutton.
Williams, William C., mc Ala. 00, cb Mobile 00, Bridgeport.

Total 9

PHYSICIANS NOT MEMBERS

Vandiver, Horace G., mc Vanderbilt 15, sb 15, Princeton.
Total 1

(37) JEFFERSON COUNTY

Birmingham 1877

President—W. S. Littlejohn Birmingham
Vice-President—M. Barfield Carter Birmingham
Secretary-Treasurer—W. E. Coleman Birmingham
County Health Officer—G. A. Denison Birmingham

Censors—A. A. Walker, Chairman, Birmingham; J. W. Simpson, Birmingham; S. W. Collier, Birmingham; Ivan Berrey, Birmingham; Edward O'Connell, Birmingham.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Akin, John M., mc Emory 25, sb 26, 1117 W. 8th Ave., Birmingham.
Alford, Othar T., mc Univ. Tenn. 29, recip. Tenn. 37, 2703½ N. 30th St., Birmingham.
Allgood, Homer Wilson, mc Ala. 12, sb 12, Fairfield.
Anderson, Martin N., mc Univ. Tenn. 41, sb 42, 1601 N. 25th St., Birmingham.
Andrews, Neal L., mc Tulane 30, recip. La. 31, 2121 Highland Ave., Birmingham.
Anthony, J. C., mc Ala. 09, sb 09, Massey Bldg., Birmingham.
Applebaum, Samuel L., mc Univ. Tenn. 36, recip. Tenn. 39, Woodward Bldg., Birmingham.
Argo, John R., mc Vanderbilt 23, sb 23, Tarrant.
Armour, William S., mc Atlanta P. & S. 13, recip. Ga. 20, 900 S. 20th St., Birmingham.
Ashworth, Robert F., mc Louisville Hosp. 03, sb 03, Rt. 2, Box 59, Eclectic.
Atwood, Abner Lowe, mc Univ. Nashville 07, cb Franklin 07, Woodward Bldg., Birmingham.
Baker, Roger Denio, mc Harvard 28, NBE 45, Jefferson Hospital, Birmingham.
Barclift, William C., Jr., mc Tenn. 34, recip. Tenn. 37, 1922 S. 10th Ave., Birmingham.
Barelare, Bruno, Jr., mc Johns Hopkins 38, recip. Ind. 46, Med. Arts Bldg., Birmingham.
Barnes, Rhett G., mc Tulane 38, recip. La. 40, 935 S. 20th St., Birmingham.
Barron, James Mathew, mc Tulane 41, sb 42, Employees' Hospital, Fairfield.
Bashinsky, Leo M., mc Vanderbilt 43, recip. Tenn. 47, 2028 Highland Ave., Birmingham.
Batson, Walter P., mc Tulane 42, sb 43, Employees' Hosp., Fairfield.
Becton, James Alvis, mc Vanderbilt 18, recip. Tenn. 25, Box 2896, Woodlawn, Birmingham.

Beddow, William Henry, mc Tulane 15, sb 15, Med. Arts Bldg., Birmingham.
Benson, Ralph C., mc Johns Hopkins 36, recip. Ind. 41, Medical Arts Building, Birmingham. (S.)
Berrey, Ivan C., mc Rush 25, recip. Ill. 28, 2211 Highland Avenue, Birmingham.
Berrey, Ruth R., mc Tulane 28, recip. La. 29, 2211 Highland Avenue, Birmingham.
Berry, Robert A., mc S. C. 27, recip. S. C. 32, Empire Bldg., Birmingham.
Berry, Wm. Thompson, mc Vanderbilt 99, cb 99, Empire Bldg., Birmingham.
Best, Ralph Lee, mc Univ. Ark. 37, recip. Ark. 46, Ramsey-McCormack Bldg., Ensley.
Bishop, Brooks, mc Emory 41, sb 42, Margaret.
Black, John W., mc Ala. 09, sb 10, 2104 Avenue G, Ensley, Birmingham.
Blank, William H., mc Rush 38, sb 38, Woodward Bldg., Birmingham.
Blanton, Russell, mc Rush 31, sb 31, 2121 Highland Ave., Birmingham.
Blue, James Howard, mc Ala. 13, sb 13, Bessemer.
Boggs, Lloyd K., mc Univ. Ga. 24, recip. Ga. 41, 516 N. 21st Street, Birmingham.
Bohorfoush, Joseph G., mc Vanderbilt 43, recip. Tenn. 43, Jefferson Tuberculosis San., Birmingham.
Botta, Louis P., mc Rush 26, recip. Ill. 29, 1917½ Ave. E., Ensley, Birmingham.
Boulware, Thos. M., mc Washington Univ. 26, recip. Tenn. 29, 1601 N. 25th St., Birmingham.
Box, Thomas T., mc Chicago M. & S. 16, recip. Miss. 37, Ensley Emergency Hosp., Ensley, Birmingham.
Bradford, Duke C., mc Ala. 14, sb 14, 1509 N. 34th Street, Birmingham.
Brannon, Robert M., mc Tulane 22, sb 23, 2121 Highland Ave., Birmingham.
Branscomb, Louise, mc Johns Hopkins 28, Nat. Ex. Bd. 31, Woodward Bldg., Birmingham.
Brice, J. Arthur, mc Ala. 13, sb 13, Tarrant.
Bristow, Bernard T., mc Tenn. 24, recip. Tenn. 27, Bessemer.
Brown, Hunter M., mc Tulane 34, recip. La. 38, 1922 10th Avenue S., Birmingham.
Brown, Morgan W., mc Tulane 27, recip. La. 28, TCI Disp., Pratt City, Birmingham.
Brownlee, Leslie G., mc Okla. 12, sb 16, Protective Life Bldg., Birmingham.
Burns, William Arthur, mc Memphis 91, cb Lamar 91, 3616 Norwood Blvd., Birmingham.
Burrett, John B., mc New York 37, NBE 46, 918 S. 20th Street, Birmingham.
Bush, J. D., Jr., mc Rush 36, sb 36, Med. Col. of Ala., Birmingham.
Caldwell, Hale Albert, mc Ala. 18, sb 18, 301 S. 41st St., Birmingham.
Callahan, Alston, mc Tulane 33, recip. Miss. 46, Medical College of Alabama, Birmingham.
Callaway, Raymond R., mc Ill. 27, sb 27, Empire Bldg., Birmingham.
Campbell, Samuel Joseph, mc Tulane 33, sb 33, 811 S. 20th St., Birmingham.
Carmichael, John Leslie, mc Tulane 24, sb 25, 2011 S. 9th Ave., Birmingham.
Carmichael, Josiah N., mc Ala. 13, sb 13, Fairfield.
Carmichael, William M., mc Univ. Nashville 09, sb 07, Fairfield.
Carpenter, Burwell S., mc Ala. 05, cb Pickens 05, Fairfield.
Carraway, Benjamin M., mc LSU 35, sb 35, 1601 N. 25th St., Birmingham.
Carraway, Chas. Newton, mc Ala. 02, cb 02, 1601 N. 25th St., Birmingham.
Carter, Henry Rose, Jr., mc Pa. 08, sb 20, Woodward Bldg., Birmingham.
Carter, Melson Barfield, mc Tulane 21, sb 21, Woodward Bldg., Birmingham.

- Casey, Albert Eugene, mc St. Louis Univ. 27, recip. Mo. 42, Jefferson Hospital, Birmingham.
- Chandler, James Robert, mc Ala. 09, sb 11, Bessemer.
- Chapman, Jerome Cochran, mc Tulane 23, recip. La. 26, 2160 Highland Avenue, Birmingham.
- Cheatham, Thomas Alfred, mc Jefferson 09, sb 10, Frank Nelson Bldg., Birmingham.
- Chenoweth, Arthur I., mc Cornell 37, sb 37, 2205 Highland Ave., Birmingham.
- Chenoweth Beach, mc Johns Hopkins 39, sb 39, Med. Col. Ala., Birmingham.
- Cherry, Alfred, mc Univ. Buffalo 36, recip. Ohio 38, Med. Arts Bldg., Birmingham.
- Childs, Edward A., mc Emory 43, sb 44, 929 S. 20th St., Birmingham.
- Chipps, H. Davis, mc Univ. Louisville 34, recip. Ky. 42, Jefferson Hospital, Birmingham. (S.)
- Clayton, Edward C., mc Ala. 09, sb 09, Leeds.
- Clements, F. H., mc Ala. 17, pro forma USN 19, Med. Arts Bldg., Birmingham.
- Cloud, Robert Emmett, mc Tulane 10, sb 09, Ensley, Birmingham.
- Clyde, Wallace A., mc Tulane 26, sb 26, 900 S. 20th St., Birmingham.
- Cochran, John P., mc Ala. 14, sb 18, 1 So. 55th Place, Birmingham.
- Cohn, Samuel Kline, mc Tulane 41, recip. La. 46, Jefferson Hosp., Birmingham.
- Coleman, Grover Cleveland, mc Ala. 11, sb 12, 5049 Parkway, Fairfield.
- Coleman, William E., Jr., mc George Washington 34, sb 35, 2121 Highland Avenue, Birmingham.
- Collier, Sid. W., mc Univ. Minn. 22, recip. Minn. 24, 900 S. 20th St., Birmingham.
- Collins, Chalmers D., mc Louisville 30, sb 30, Massey Bldg., Birmingham.
- Collins, Thomas A., mc Ala. 12, sb 13, Med. Arts Bldg., Birmingham.
- Colquitt, Chas. J., mc Emory 23, sb 23, Bessemer.
- Comer, Robert T., mc Johns Hopkins 01, cb Bullock 01, Comer Bldg., Birmingham.
- Compton, Wheeler Wilkinson, mc Vanderbilt 03, cb 03, Black Mountain, N. C.
- Constantine, Kosciusco Walker, mc Johns Hopkins 05, cb 05, 229 Barton Ave., Palm Peach, Fla.
- Conwell, Hugh Earle, mc Ala. 15, sb 15, 216 Med. Arts Building, Birmingham.
- Cooley, Beamon S., mc Tenn. 12, sb 12, Woodward Building, Birmingham.
- Copeland, Miles A., mc Ala. 03, cb 03, Clark Bldg., Birmingham.
- Cornwell, Robert A., mc Jefferson 39, recip. Pa. 41, 1131 N. 28th Street, Birmingham. (S.)
- Coston, Ralls M., mc Okla. 29, recip. Okla. 30, 2012 10th Avenue S., Birmingham.
- Cothran, Robert M., mc Johns Hopkins 26, recip. Md. 41, 1023 S. 20th St., Birmingham.
- Coyle, Daniel J., mc Rush 28, sb 30, Woodward Bldg., Birmingham.
- Crelly, Harry C., mc Ala. 02, cb Washington 02, Watts Bldg., Birmingham.
- Crenshaw, James F., mc Wash. Univ. 42, recip. Mo. 46, 2219 Highland Ave., Birmingham.
- Cunningham, Joseph Anthony, mc Univ. Freiburg 35, NBE 42, Medical Arts Bldg., Birmingham.
- Cunningham, William Alva, mc Univ. Toronto 23, recip. N. Y. 43, 103 N. 55th St., Birmingham.
- Dabney, Marye Y., mc Johns Hopkins 12, sb 12, 2300 Highland Avenue, Birmingham.
- Dale, Seabron C., mc Tulane 35, recip. Miss. 46, 811 S. 20th St., Birmingham.
- Daly, Edgar Wm., mc Tulane 08, sb 10, 627 Woodward Bldg., Birmingham.
- Darden, Wm. H., mc Duke 32, recip. Minn. 37, T. C. I. Disp., Pratt City, Birmingham.
- Davenport, L. Orton, mc Western Reserve 09, recip. Col. 26, Birmingham, Rt. 2.
- Davidson, Alton W., mc Emory 29, sb 29, Realty Bldg., Bessemer.
- Davidson, Marion Tabb, mc Univ. Cincinnati 11, sb 12, Frank Nelson Bldg., Birmingham.
- Dawson, Lewis Mercer, mc Tulane 36, sb 36, 2231 15th Ave. S., Birmingham.
- Deaver, Clyde Wilson, mc Vanderbilt 17, recip. Tenn. 19, Empire Bldg., Birmingham.
- Deaver, Wilson T., mc Ala. 15, sb 16, Adamsville, Rt. 2.
- Dedman, James E., mc Univ. Tenn. 90, cb 98, Betterton, Md.
- de la Garza, William, mc Univ. Texas 36, recip. Texas 46, 2811 1-2 18th St. S., Birmingham.
- Denison, Geo. A., mc Baylor 30, sb 30, Box 2591, Birmingham.
- Denson, Fred Hammond, mc Ala. 12, sb 13, Rt. 4, Box 883, Bessemer.
- Donald, Charles J., mc Tulane 36, sb 36, 918 S. 20th St., Birmingham.
- Donald, Dan Caldwell, mc Tulane 09, sb 11, 918 S. 20th St., Birmingham.
- Donald, Joseph M., mc Tulane 25, recip. Minn. 32, 918 S. 20th St., Birmingham.
- Donnelly, Charles Augustus, mc Ohio 08, sb 10, Watts Bldg., Birmingham.
- Douglas, Gilbert F., mc Ala. 10, sb 11, 1111 S. 20th St., Birmingham.
- Douglas, Gilbert F., Jr., mc Vanderbilt 40, sb 41, 1111 S. 20th St., Birmingham.
- Douglass, John, mc Ala. 00, cb Lauderdale 01, Comer Bldg., Birmingham.
- Drennen, Earle, mc P. & S. N. Y. 06, sb 05, 2160 Highland Ave., Birmingham.
- Durick, Stephen A., mc LSU 33, sb 34, Realty Bldg., Bessemer.
- Edwards, Elwart H., mc Univ. Tenn. 39, recip. Tenn. 41, Leeds.
- Edwards, Jesse E. H., mc Univ. Nashville 08, sb 12, McCalla.
- Elkourie, Leo A., mc Rush 29, sb 31, 1625 South 12th Avenue, Birmingham.
- Elliott, Hiram R., Jr., mc Univ. Tenn. 38, recip. Miss. 43, 2144 Highland Ave., Birmingham.
- Falletta, Pasqualino T., mc Tulane 26, sb 26, Massey Bldg., Birmingham.
- Farmer, H. R., mc Tulane 22, sb 22, Fairfield.
- Farrar, William C., mc Ala. 08, sb 08, Box 970, Midway City, Cal.
- Ferguson, Hal, mc Univ. Cincinnati, 41, recip. Ohio 46, Employees' Hosp., Fairfield.
- Ferry, James A., mc Tulane 32, sb 32, Medical Arts Bldg., Birmingham.
- Field, Charles H., mc Univ. Ga. 41, recip. Ga. 46, Woodward Bldg., Birmingham.
- Fisher, Charles Jack, mc Tulane 34, sb 34, Am. Cast Iron Pipe Co., Birmingham.
- Fisher, Gilbert E., mc Univ. Mich. 36, recip. Mich. 40, Medical Arts Building, Birmingham.
- Fonville, Wm. Drakeford, mc Tulane 04, cb Wilcox 05, 929 S. 20th St., Birmingham.
- Ford, C. H., mc Emory 27, sb 27, Med. Arts Bldg., Birmingham.
- Forney, John M., mc Rush 26, sb 28, 2463 Fairview Dr., Birmingham.
- Fox, Bertram Arthur, mc Ala. 96, cb 96, Chamber of Commerce Bldg., Birmingham.
- Fox, Carl Alexander, mc Tulane 00, cb 00, Brown-Marx Bldg., Birmingham.
- Freeman, Arthur M., Jr., mc Vanderbilt 40, recip. Tenn. 46, 2300 Highland Ave., Birmingham.
- Friedman, Louis L., mc Univ. Ark. 41, recip. Ark. 45, 1124 S. 20th St., Birmingham.
- Gaines, Cecil Dean, mc Ala. 11, sb 11, Woodward Bldg., Birmingham.
- Gaines, H. F., mc Emory 22, sb 23, 2854 Fairway Drive, Birmingham.

- Galbraith, James Garber, mc St. Louis Univ. 38, NBE 46, 1117 S. 22nd St., Birmingham.
- Garber, James R., mc Jefferson 13, sb 13, 1117 S. 22nd St., Birmingham.
- Garlington, William H., mc Louisville 21, recip. Ky. 25, 5353 N. First Ave., Birmingham.
- Garmon, Clyde N., mc Ala. 14, sb 15, Rt. 2, Bessemer.
- Garrison, John Earl, mc Ala. 04, cb Walker 04, Woodward Bldg., Birmingham.
- Gehrken, Henry S., mc Ga. 09, recip. Ga. 29, 1601 N. 25th St., Birmingham.
- Gillespy, Robert R., mc Tulane 22, sb 22, 4403 Overland Road, Birmingham (S.)
- Givhan, Edgar G., Jr., mc Jefferson 28, sb 29, Med. Arts Bldg., Birmingham.
- Glasgow, Richard D. mc Emory 40, sb 40, Employees' Hospital, Fairfield.
- Glasgow, Robert S., mc Univ. South 00, cb Shelby 00, Adamsville.
- Glenn, E. Byron, mc Jefferson 31, recip. N. C. 46, Med. Arts Bldg., Birmingham.
- Goldner, Harry, mc Univ. Pa. 37, sb 37, 2121 Highland Avenue, Birmingham.
- Goldstein, Ben, mc Emory 22, sb 22, 2160 Highland Ave., Birmingham.
- Goodall, Albert G., mc Vanderbilt 26, recip. Tenn. 27, Martin Bldg., Birmingham.
- Goodall, Robert G., mc Univ. Tenn. 40, recip. Tenn. 45, Jefferson Hosp., Birmingham.
- Goodman, Seaburt, mc Univ. Toronto 40, sb 46, 1031 S. 21st St., Birmingham.
- Gordon, George R., mc Jefferson 35, recip. Pa. 40, 2121 Highland Avenue, Birmingham. (S.)
- Graham, George S., Jr., mc Harvard 41, sb 42, 2219 Highland Ave., Birmingham.
- Grasberger, Joseph C., mc Hahnemann 37, recip. Pa. 40, Raimund Mines, Birmingham, Rt. 7.
- Green, Albert H., mc Tenn. 28, recip. Tenn. 30, Woodward Bldg., Birmingham.
- Green, Elbert Paul, mc Ala. 11, sb 12, 1200 Graymont Ave., Birmingham.
- Green, Roy C., mc Tulane 30, sb 30, 811 S. 20th St., Birmingham.
- Greene, Gilbert B., mc Tulane 32, sb 34, 5357-1st Avenue N., Birmingham.
- Griffin, Belton G., mc Tulane 44, sb 45, Praco.
- Griffin, George W., mc LSU 38, recip. La. 39, 2501 N. 16th Ave., Birmingham.
- Grubbs, Roy J., mc Univ. Pa. 41, sb 42, Fayette.
- Guthrie, Robert F., mc Emory 34, recip. Ga. 37, Woodward Bldg., Birmingham.
- Habeeb, Alfred, mc Univ. Tenn. 38, recip. Miss. 41, 2144 Highland Ave., Birmingham.
- Hairston, Wm. George, mc Md. 04, sb 04, 1504 N. 33rd Ave., Birmingham.
- Hamrick, Robert A., mc Johns Hopkins 23, recip. Md. 29, Employees' Hospital, Birmingham.
- Hamrick, Robert Hampton, mc Atlanta 95, cb Blount 96, Watts Bldg., Birmingham.
- Hankins, Gordon M., mc Tulane 36, sb 36, Employees' Hospital, Fairfield.
- Hardy, Walter B., mc Tulane 12, sb 12, 2121 Highland Ave., Birmingham.
- Hargis, Albert S., Jr., mc Tulane 34, sb 34, Ensley, Birmingham.
- Hargis, Estes H., mc Pa. 21, recip. Pa. 27, 1131 N. 28th St., Birmingham.
- Harris, Arthur Buckner, mc Univ. Va. 02, cb 03, Med. Arts Bldg., Birmingham.
- Harris, Edward A., mc Wash. Univ. 37, sb 37, 1117 S. 20th St., Birmingham.
- Harris, Esau A., mc Univ. South 98, cb St. Clair 98, 221 Realty Building, Bessemer.
- Harris, Farley W., mc Ala. 09, sb 10, Woodward Bldg., Birmingham.
- Harris, Herbert A., mc Ala. 14, sb 14, Woodward Bldg., Birmingham.
- Harris, Homer Persius (Blue), mc Tulane 21, sb 21, Bessemer.
- Harris, Reuben R., mc Wash. Univ. 38, sb 38, 1117 S. 20th St., Birmingham.
- Harris, Seal, mc Univ. Va. 94, sb 94, 2234 Highland Ave., Birmingham.
- Harris, William M., Jr., mc Univ. Pa. 42, sb 43, Norwood Hosp., Birmingham.
- Harrison, William Groce, mc Md. 92, cb Talladega 92, 4142 Cliff Road, Birmingham.
- Haun, Chas. A., mc Vanderbilt 23, recip. Tenn. 25, 2801 Ensley Ave., Fairview Sta., Birmingham.
- Haynes, Walter G., mc Univ. Ill. 38, recip. Ill. 45, Comer Bldg., Birmingham.
- Hays, J. Howard, mc Ala. 14, sb 14, Comer Bldg., Birmingham.
- Heacock, Joseph Davis, mc Tulane 92, cb 92, 2021 6th Ave. N., Birmingham.
- Heflin, Wyatt, mc Jefferson 84, cb Randolph 85, 3216 Cliff Rd., Birmingham.
- Henderson, Hiliary Herbert, Jr., mc Tulane 38, recip. La. 42, 2160 Highland Ave., Birmingham.
- Hightower, Russell G., mc Rush 36, sb 36, 2205 Highland Ave., Birmingham.
- Hillhouse, John L., mc Vanderbilt 29, recip. Tenn. 30, Med. Arts Bldg., Birmingham.
- Hirsh, Joseph E., mc Pa. 22, sb 23, Med. Arts Bldg., Birmingham.
- Hogan, Edgar Poe, mc Ala. 09, sb 08, 920 S. 20th St., Birmingham.
- Hogan, George Archibald, mc Ala. 96, cb 96, 920 S. 20th St., Birmingham.
- Hogan, Marshall D., mc Rush 27, sb 27, 311 W. Main St., Boonton, N. J.
- Holley, Howard L., mc S. C. 41, recip. S. C. 45, 8 Alden Lane, Colonial Hills, Birmingham.
- Horn, Joseph R., Jr., mc Tulane 23, recip. La. 24, Bessemer.
- Horn, Samuel Wilson, mc Emory 16, sb 17, Bessemer.
- Howe, Charles D., mc Univ. Tenn. 40, recip. Tenn. 42, 2501 16th Avenue N., Birmingham.
- Hubbard, Lex Walter, mc Jefferson 11, sb 14, Tarrant.
- Hudson, Henry C., mc Tulane 41, recip. La. 46, Norwood Hosp., Birmingham.
- Hughes, Brady A., mc Jefferson 27, recip. Pa. 36, Woodward Bldg., Birmingham.
- Hunter, John W., Jr., mc Wash. Univ. 38, sb 38, Hillman-Jefferson Hosp., Birmingham.
- Hutto, A. S., mc Ala. 15, sb 15, Pinson.
- Imler, Allison E., mc Hahnemann 37, recip. Pa. 46, 620 S. 20th St., Birmingham.
- Irwin, Winston H., mc Univ. Okla. 37, sb 38, 1601 N. 25th St., Birmingham.
- Issos, Demetrius N., mc Vanderbilt 27, sb 28, Woodward Bldg., Birmingham.
- Jackson, Harry Lee, mc Ala. 18, sb 18, Empire Bldg., Birmingham.
- Jenkins, John F., mc Ala. 01, cb Mobile 01, 3536 27th Street N., Birmingham.
- Jenkins, John F., Jr., mc Tulane 31, sb 31, 2300 Highland Avenue, Birmingham.
- Johns, Lemuel J., mc Ala. 14, sb 14, Massey Bldg., Birmingham.
- Johnson, Bruce King, mc Tenn. 44, recip. Tenn. 45, Flat Creek.
- Johnson, John Frank, mc Emory 40, recip. Ga. 46, Box 252, Gardendale.
- Johnston, Hardee, mc Univ. Va. 95, cb 96, 2121 Highland Ave., Birmingham.
- Jones, Walter C., mc Northwestern 02, sb 18, 7915 Second Ave. S., Birmingham.
- Jones, W. Nicholson, mc Tulane 27, recip. La. 29, Woodward Bldg., Birmingham.

- Jordan, Jno. Sheffield, mc Emory 25, sb 25, 5357 N. First Ave., Birmingham.
- Jordan, William Mudd, mc P. & S. N. Y. 95, cb 95, 2772 Hanover Circle, Birmingham.
- Joseph, Kellie N., mc S. C. 29, recip. Ga. 35, Woodward Bldg., Birmingham.
- Justice, John D., mc Emory 33, recip. Ga. 36, 3616 Bessemer Rd., Birmingham.
- Kahn, Sigmond A., mc Tulane 29, recip. La. 31, 2160 Highland Ave., Birmingham.
- Kay, Frank A., mc Emory 22, sb 22, Med. Arts Bldg. Birmingham.
- Kelley, Ray Hansen, mc Northwestern 38, recip. Ill. 43, E. I. du Pont de Nemours Co., Pompton Lake, N. J.
- Kennedy, Frank F., mc Tulane 31, recip. La. 35, No. 1, S. 55th Pl., Birmingham.
- Kennedy, Hughes, Jr., mc Harvard 21, sb 23, Highland Plaza Apts., Birmingham.
- Kesmodel, Karl F., mc Tulane 16, sb 16, Med. Arts Bldg., Birmingham.
- Kimbrough, Ralph M., mc Chicago M. & S. 17, recip. Ill. 23, Powderly.
- Kincannon, Leroy T., mc Va. 20, sb 21, Woodward Bldg., Birmingham.
- Kinthead, Kyle Johnston, mc Tulane 15, sb 17, Empire Bldg., Birmingham.
- Kirby, Lelias E., mc Emory 26, sb 26, 5357 N. First Ave., Birmingham.
- Klapper, Margaret S., mc Tulane 39, recip. La. 46, Med. Col. of Alabama, Birmingham.
- Knight, J. Hurley, mc Emory 31, sb 31, 20 N. 55th Place, Birmingham.
- Kracke, Roy Rachford, mc Rush 27, recip. Ga. 45, Jefferson Hospital, Birmingham.
- Lamar, Clifford L., mc Harvard 20, sb 20, 1922 10th Ave. S., Birmingham.
- Langdon, Harold R., mc Queen's Univ. 38, recip. N. Y. 40, 2236 Bessemer Rd., Birmingham.
- Lavender, Claude B., mc Memphis Hosp., 08, sb 08, Falkville.
- Lee, Joseph M., mc Johns Hopkins 42, recip. Md. 46, 2160 Highland Ave., Birmingham.
- Leland, Joseph, mc Tulane 04, cb Tuscaloosa 04, 2840 Fairway Drive, Birmingham.
- Lester, Belford S., mc Vanderbilt 07, sb 08, Med. Arts Bldg., Birmingham.
- Lewis, Charles Franklin, mc Tulane 21, sb 22, Woodward Bldg., Birmingham.
- Lewis, Herbert J., mc Ala. 15, sb 16, 1601 Empire Bldg., Birmingham.
- Lewis, Thomas Knight, mc Vanderbilt 12, sb 13, 935 S. 20th St., Birmingham.
- Linder, Browne G., mc Emory 27, sb 27, Med. Arts Building, Birmingham.
- Linder, Hugh M. C., mc Vanderbilt 32, recip. Tenn. 36, 2211 Highland Ave., Birmingham.
- Lineberry, Ellis D., mc Univ. Va. 26, recip. Va. 31, 1601 N. 25th St., Birmingham.
- Linn, Julius E., mc Emory 28, recip. Ga. 30, Med. Arts Bldg., Birmingham.
- Little, Samuel C., mc Emory 39, recip. Ga. 45, 2167 Highland Ave., Birmingham.
- Littlejohn, Wilnot Shipp, mc Emory 21, recip. Ga. 30, 2300 Highland Ave., Birmingham.
- Livingston, James A., mc Pa. 11, sb 19, Woodward Bldg., Birmingham.
- Locke, W. W., mc Tulane 26, sb 26, Empire Bldg., Birmingham.
- London, Irving David, mc Emory 38, recip. La. 42, Hillman-Jefferson Hosp., Birmingham.
- Long, William Walker, mc Tenn. 96, sb 03, Leeds Rd., Birmingham.
- Love, John T., mc Ala. 00, cb Morgan 00, 3619 So. Redmont Rd., Birmingham.
- Lovelady, Robert G., mc Ala. 14, sb 15, 5500 1st Ave. N., Birmingham.
- Lovell, Durward L., mc Duke Univ. 37, NBE 42, Masonic Bldg., W. E., Birmingham.
- Lull, Cabot, mc Michigan 99, cb Elmore 01, Med. Arts Bldg., Birmingham.
- Lupton, Frank Allemang, mc Johns Hopkins 99, cb 00, 2105 S. 15th Ave., Birmingham.
- MacIntyre, Dugal S., mc Univ. Mich. 36, recip. Mich. 46, Med. Arts Bldg., Birmingham.
- MacQueen, James W., mc Rush 25, recip. Ill. 27, Jefferson Hospital, Birmingham.
- Magruder, Thomas V., mc Tulane 10, sb 11, Med. Arts Bldg., Birmingham.
- Magruder, Thomas V., Jr., mc Univ. Pa. 42, sb 43, Medical Arts Bldg., Birmingham.
- Martin, Wade A., mc Ala. 08, sb 10, 4331 Fifth Avenue S., Birmingham.
- Martin, Wm. B., mc Ind. 28, recip. Ind. 29, Warrior.
- Mason, James Monroe, mc Tulane 99, cb 99, Med. Arts Bldg., Birmingham.
- Mason, J. M., III, mc Johns Hopkins 34, recip. Md. 45, Medical Arts Bldg., Birmingham.
- May, William Lucius, mc Memphis 97, sb 97, Powhatan.
- McBurney, Ralph, mc Rush 29, sb 30, 1017 S. 32nd St., Birmingham.
- McCarn, Dan Wilson, mc Vanderbilt 34, recip. Tenn. 35, Warrior.
- McCarn, Oscar C., Jr., mc Tulane 40, sb 40, 2501 N. 16th Avenue, Birmingham.
- McCoy, David A., mc Univ. So. Cal. 37, recip. Cal. 47, 501 Woodward Bldg., Birmingham.
- McCoy, Walter C., mc Tulane 40, recip. La. 41, 2205 Highland Ave., Birmingham.
- McCullough, George C., mc Tulane 34, sb 35, Jacksonville, N. C. (S.)
- McDaniel, Joe Crosby, mc Ala. 12, sb 13, Frank Nelson Bldg., Birmingham.
- McDowell, James F., mc Pa. 34, sb 35, 2167 Highland Avenue, Birmingham.
- McEniry, Edgar P., mc Emory 18, sb 19, Dolomite.
- McGahey, Robert Goodloe, mc Ala. 12, sb 12, Woodward Bldg., Birmingham.
- McGahey, Travis P., mc Tulane 23, sb 24, Woodward Bldg., Birmingham.
- McGehee, Henry T., mc Ala. 04, sb Tuscaloosa 04, 1549 Graymont Avenue, West, Birmingham.
- McGraw, Felix J., mc S. C. 39, recip. S. C. 40, No. 1, S. 55th Place, Birmingham.
- McKinnon, Hector A., mc Ala. 10, sb 10, 1530 Tuscaloosa Ave., Birmingham.
- McLean, Claude Cooper, mc Vanderbilt 08, sb 08, 2012 10th Ave. So., Birmingham.
- McLester, James Bowron, mc Harvard 30, Nat. Bd. Ex. 33, 930 S. 20th St., Birmingham.
- McLester, James Somerville, mc Univ. Va. 99, cb 02, 930 S. 20th St., Birmingham.
- McNeal, Alice, mc Rush 21, recip. Ill. 46, Hillman-Jefferson Hosp., Birmingham.
- McQueen, Joseph Pickens, mc Tulane 11, sb 12, Martin Bldg., Birmingham.
- McQuiddy, Robert Clayton, mc Ala. 12, sb 13, Med. Arts Building, Birmingham.
- Meadows, James A., mc Ala. 12, sb 12, Med. Arts Bldg., Birmingham.
- Mehaffey, Jonathan W., mc Ala. 13, sb 13, 7932 1st Ave. N., Birmingham.
- Meyer, Benjamin S., mc Univ. Ill. 38, recip. Ill. 42, 1023 S. 20th St., Birmingham.
- Meyer, Jerome, mc Johns Hopkins 14, sb 17, Med. Arts Bldg., Birmingham.
- Miles, Nathan E., mc S. C. 34, recip. S. C. 37, 1031 S. 21st Street, Birmingham.
- Miller, Donald A., mc Western Reserve 37, recip. Ohio 40, 2501 N. 16th Avenue, Birmingham. (S.)
- Miller, James A., mc M. & S. Chicago 13, sb 13, Wylam.
- Mitchell, Sidney A., mc Vanderbilt 30, sb 30, Lewisburg Road, Birmingham, Rt. 7.

- Moody, William E., mc S. C. 40, sb 40, Norwood Hospital, Birmingham.
- Moore, Elbert Lee, mc Vanderbilt 45, recip. Tenn. 46, Employees' Hosp., Fairfield.
- Moore, Joseph G., mc Ala. 11, sb 12, 1127 So. 12th St., Birmingham.
- Morgan, John Ralph, mc Tulane 17, sb 17, 900 S. 20th St., Birmingham.
- Morgan, Perry A., Jr., mc Tenn. 43, sb 44, Adamsville, Rt. 2.
- Morland, H. C., mc Ky. 05, cb Hale 05, 2703½ 30th Ave. N., Birmingham.
- Morris, H. Brad, mc Emory 38, recip. Ga. 45, Med. Arts Bldg., Birmingham.
- Morris, H. R., mc Univ. Nashville 06, cb St. Clair 06, Rt. 1, Box 470, Birmingham.
- Morton, Benjamin F., mc mc Rush 32, sb 34, 2009 Ninth Avenue S., Birmingham.
- Motley, Jewett P., mc Rush 36, sb 36, Ensley, Birmingham.
- Motley, Samuel D., mc Ky. 03, cb Tallapoosa 03, 600½ 19th St., Ensley, Birmingham.
- Murphy, Grover E., mc Ala. 11, sb 11, First National Building, Birmingham.
- Nabers, Samuel F., mc Tulane 09, sb 08, 4221 S. 12th Ave., Birmingham.
- Neely, Martin G., mc Univ. Va. 25, sb 25, T. C. I. Hosp., Fairfield.
- Neville, Chas. W., mc Vanderbilt 28, recip. Tenn. 29, 2620-33rd Ave. N., Birmingham.
- Newfield, Semon U., mc Rush 26, recip. Ill. 27, 2012 10th Ave. S., Birmingham.
- Nice, Charles McKinney, mc Pa. 04, cb 05, 1419 Windsor Circle, Birmingham.
- Nicholson, William H., Jr., mc Rush 42, sb 43, Employees' Hosp., Fairfield.
- Noland, Lloyd, mc Baltimore 03, pro forma USN 13, Fairfield.
- Noojin, Ray O., mc Univ. Chicago 37, sb 38, 620 S. 20th St., Birmingham.
- Norton, Ethelbert Moses, mc Vanderbilt 14, sb 15, 4604, Terrace 2, Central Park, Birmingham.
- O'Connell, Edward, mc Bellevue 07, sb 09, Med. Arts Bldg., Birmingham.
- O'Dell, James Walter, mc Univ. Ga. 26, recip. N. C. 46, 8044 2nd Avenue S., Birmingham.
- Odom, H. G., mc Tenn. 22, sb 22, Irondale.
- Oliver, Ernest B., mc Harvard 38, NBE 46, Comer Bldg., Birmingham.
- Orton, Allen E., mc Atlanta 08, sb 08, Muscoda Hospital, Bessemer.
- Parsons, Joe L., mc Emory 26, recip. Ga. 27, 201 Ramsey Bldg., Ensley, Birmingham.
- Parsons, William C., mc Emory 24, sb 25, Woodward Bldg., Birmingham.
- Patton, William B., mc Johns Hopkins 35, recip. Md. 42, 2205 Highland Ave., Birmingham.
- Paull, Benjamin P., mc Univ. Buffalo 38, recip. N. Y. 40, 935 S. 20th St., Birmingham.
- Payne, Brack Coleman, mc Ala. 16, sb 16, Lewisburg.
- Payne, Edmund C., mc Univ. Va. 11, sb 11, New Castle.
- Payne, William N., mc Louisville 33, recip. Miss. 37, Bessemer.
- Pennington, Julius A., mc Tulane 39, recip. La. 40, Rt. 2, Box 188, Bessemer.
- Perry, Ezra B., mc Tulane 38, sb 38, 712 S. 30th St., Birmingham.
- Peterson, Edward J., mc Tulane 39, sb 40, Woodward Bldg., Birmingham.
- Pfeiffer, Ralph B., mc Univ. Nebraska 40, recip. Mo. 42, Martin Bldg., Birmingham.
- Phillips, Grady W., mc Emory 44, recip. Ga. 45, Jefferson Hospital, Birmingham.
- Pierson, Thomas C., mc Ala. 11, sb 11, Alden.
- Pitts, Edgar B., mc Tulane 38, sb 35, Ramsey McCormack Bldg., Ensley, Birmingham.
- Poole, William L., mc Tulane 38, sb 38, Woodward Bldg., Birmingham.
- Pope, Ernest C., mc Emory 19, recip. Va. 20, 2021 6th Ave. N., Birmingham.
- Posey, Benjamin F., mc Ala. 10, sb 10, Rt. 3, Box 198, Birmingham.
- Posey, Louis C., mc Harvard 35, sb 35, Med. Arts Bldg., Birmingham.
- Pow, John R., mc Univ. South 03, cb St. Clair 03, Woodward.
- Prescott, John L., mc Long Is. 44, sb 45, 2506-16th Ave., N., Birmingham.
- Prescott, Wm. Ernest, mc Ala. 00, cb Chilton 00, 29½ N. 77th St., Birmingham.
- Prescott, Wm. Ernest, Jr., mc Rush 27, sb 27, 29½ N. 77th St., Birmingham.
- Pruitt, Elihu Posey, mc P. & S., Atlanta 05, cb Lowndes 05, Rt. 1, Box 200-B, Warrior.
- Pryor, Robert B. mc Tulane 05, cb Dallas 06, Ensley Hospital Clinic, Ensley, Birmingham.
- Ramsey, Joseph H., mc Wash. Univ. 41, recip. Mo. 46, Norwood Hosp., Birmingham.
- Ransom, William Walter, mc Vanderbilt 88, cb 88, Empire Bldg., Birmingham.
- Ray, Emmette C., mc Ala. 18, sb 18, 2012 Avenue F., Ensley, Birmingham.
- Reagan, Cas, mc Tulane 24, recip. Tenn. 25, 1603-43rd St., Bellview Hgts., Birmingham.
- Reque, Paul G., mc Duke 34, NBE 46, 811 S. 20th St., Birmingham.
- Rike, Heber C., mc Tulane 24, sb 25, 1140 41st St., Belview Hts., Birmingham.
- Riser, William H., Jr., mc Emory 38, sb 38, Med. Col. Ala., Birmingham.
- Roberts, Wyatt S., mc Ala. 14, sb 14, Empire Bldg., Birmingham.
- Robertson, Brison Oakley, mc Vanderbilt 18, sb 19, Empire Bldg., Birmingham.
- Robertson, Jarratt P., mc Vanderbilt 23, recip. Tenn. 24, Med. Arts Bldg., Birmingham.
- Robinson, Edward B., Jr., mc Tulane 36, sb 36, 2144 Highland Ave., Birmingham.
- Roscoe, Geoffrey J., mc Univ. Budapest 36, sb 37, 2160 Highland Ave., Birmingham.
- Rosser, Wm. Jas., mc Tulane 25, sb 25, Medical Arts Bldg., Birmingham.
- Rountree, Walter B., mc Vanderbilt 27, recip. Tenn. 30, Thomas Sta., Birmingham.
- Rucker, Edmond W., Jr., mc Univ. Denver 04, sb 08, Woodward Bldg., Birmingham.
- Rudolph, Charles Murray, mc Ala. 00, cb Lowndes 00, 1200 S. 20th St., Birmingham.
- Russakoff, Abraham H., mc Tufts 40, NBE 46, 2121 Highland Ave., Birmingham.
- Russell, Richard O., mc Tulane 22, sb 22, 2011 S. 9th Ave., Birmingham.
- Sanders, Elbert H., mc Tulane 41, sb 42, 2316 Highland Avenue, Birmingham.
- Schapiro, Mark M., mc George Washington 38, NBE 41, TCI Emergency Disp., Ensley, Birmingham. (S.)
- Schwartz, Ferdinand F., mc Rush 29, recip. Ohio 45, 916 S. 20th St., Birmingham.
- Scotfield, Theodore F., mc Tulane 26, sb 26, 2021-6th Ave., N., Birmingham.
- Scott, Edgar Marvin, mc Ala. 01, cb Walker 01, 935 S. 20th St., Birmingham.
- Scott, Edgar M., Jr., mc Harvard 34, recip. Tenn. 37, 935 S. 20th St., Birmingham.
- Scott, Walter F., mc Univ. Va. 04, cb 07, Med. Arts Bldg., Birmingham.
- Seay, Jas. E., mc Tenn. 27, recip. Tenn. 28, Shades Mountain, Birmingham.
- Seibold, James L., mc Tulane 21, sb 21, 1117 S. 22nd St., Birmingham.
- Sellers, Henry Graham, mc Vanderbilt 00, cb Morgan 00, 1346½ Tuscaloosa Ave., Birmingham.
- Sellers, Ira Jackson, mc Vanderbilt 97, cb 97, Chamber of Commerce Bldg., Birmingham.

- Shannon, Paul W., mc Mich. 31, recip. Mich. 36, Woodward Bldg., Birmingham.
- Shearer, Raymond J., mc Tenn. 32, recip. Tenn. 34, Med. Arts Bldg., Birmingham.
- Shelton, James B., mc Tulane 34, sb 35, 1131 N. 28th St., Birmingham.
- Sherrill, John D., mc Ala. 15, sb 17, Med. Arts Bldg., Birmingham.
- Shropshire, Courtney William, mc Tenn. 00, cb Limestone 03, Frank Nelson Bldg., Birmingham.
- Shugerman, Harry P., mc Johns Hopkins 08, sb 08, 2121 Highland Ave., Birmingham.
- Silberman, Donald J., mc Univ. Md. 38, recip. Md. 39, Hillman-Jefferson Hosp., Birmingham.
- Silbermann, Salo Josef, mc Univ. Vienna 36, sb 45, Grace-New Haven Community Hosp., New Haven, Conn.
- Simon, Harold E., mc Univ. Pittsburg 22, recip. Pa. 27, 2930 N. 12th Ave., Birmingham.
- Simpson, John W., mc Vanderbilt 18, recip. Tenn. 22, 1117 So. 22nd St., Birmingham.
- Sims, Albert G., mc Univ. Nashville 05, cb Talladega 05, Edgewater Mines, Rt. 8, Birmingham.
- Siniard, Emmett Clarence, mc Vanderbilt 17, recip. Ky. 20, Acipco Dispensary, Birmingham.
- Smelo, Leon Samuel, mc Univ. Pa. 34, recip. Pa. 42, 2219 Highland Ave., Birmingham.
- Smith, Charles Henry, mc Ala. 03, sb 03, 3147 Norwood Blvd., Birmingham.
- Smith, D. Driver, mc Tulane 35, recip. La. 38, 1207 S. 21st Place, Birmingham. (S.)
- Smith, Elisha B., mc Ala. 12, sb 14, 913 S. 19th St., Birmingham.
- Smith, Frank Campbell, mc Ala. 03, cb 03, Bessemer.
- Smith, Greene H., mc Tenn. 16, sb 16, Ramsey Bldg., Ensley, Birmingham.
- Smith, Henry Ralph, mc Tulane 25, sb 25, 2011 S. 9th Ave., Birmingham.
- Smith, James Clement, mc Ala. 11, sb 11, 118 N. 77th St., Birmingham.
- Smith, Ralph Jackson, mc Wash. Univ. 43, recip. Mo. 45, Employees' Hosp., Fairfield.
- Smith, Thos. Luther, mc Tulane 23, sb 23, 118 N. 77th St., Birmingham.
- Snow, James S., mc Univ. Col. 34, sb 35, Comer Building, Birmingham.
- Snow, John W., Jr., mc Chattanooga 07, cb Walker 07, Palos.
- Somerset, Sterling M., mc Emory 27, sb 27, 5385 First Avenue North, Birmingham.
- Sorrell, Lewis E., mc Ala. 17, sb 17, 1601 N. 25th St., Birmingham.
- Sparks, David Hoyt, mc Tulane 12, sb 13, 831 3rd Ave. W., Birmingham.
- Spies, Tom D., mc Harvard 28, recip. Ohio 40, Hillman Hospital, Birmingham.
- Spira, Victor, mc Univ. Vienna 37, NBE 44, Empire Bldg., Birmingham.
- Stabler, A. L., mc Vanderbilt 09, sb 08, 2021-6th Avenue N., Birmingham.
- Stayer, Glenn, mc Duke 34, NBE 41, Woodward Building, Birmingham.
- Stephenson, Robert Hilton, mc Emory 39, recip. Ga. 46, Am. Cast Iron Pipe Co., Birmingham.
- Stephenson, Samuel L., Jr., mc Tenn. 36, recip. Tenn. 37, Room 504, Court House, Birmingham.
- Stewart, Roddie L., mc Tenn. 34, recip. Tenn. 36, 712 S. 30th St., Birmingham.
- Stewart, Vera B., mc Tenn. 41, recip. Tenn. 44, 2167 Highland Avenue, Birmingham.
- Stockton, Frederick Eugene, mc Tulane 11, sb 19, Comer Bldg., Birmingham.
- Stone, John J., mc Emory 37, recip. Ga. 41, TCI Dispensary, Pratt City.
- Stuteville, Ethel, mc Univ. Ind. 21, recip. Ind. 41, Woodward Bldg., Birmingham.
- Swann, Clair L., mc Univ. Kansas 39, recip. Kansas 42, 622 Osage St., Leavenworth, Kan.
- Sweeney, Donald B. P., mc Univ. Iowa 40, recip. Iowa 41, 1131 N. 29th St., Birmingham.
- Teague, Eldred B., mc Univ. Pa. 34, recip. Pa. 36, 230 Ridge Avenue, Homewood.
- Terhune, S. Ralph, mc Tulane 30, sb 30, Woodward Bldg., Birmingham.
- Terrill, James W., mc Ala. 13, sb 13, 3120 Avenue H, Ensley, Birmingham.
- Thomas, Herbert H., mc Tulane 38, sb 38, 2300 Highland Ave., Birmingham.
- Thompson, William Davis, mc George Washington 43, sb 44, Trussville.
- Thuss, Chas. J., mc Vanderbilt 31, recip. Tenn. 34, 2230 N. 3rd Avenue, Birmingham.
- Thuss, William G., mc Vanderbilt 20, recip. Tenn. 23, 2230 N. 3rd Avenue, Birmingham.
- Timberlake, Landon, mc Md. 34, recip. Md. 37, 2121 Highland Avenue, Birmingham.
- Townsend, John M., mc Mich. 30, recip. Mich. 37, U. S. Navy, Birmingham. (S.)
- Trucks, J. Frank, mc Washington Univ. 36, sb 36, 103 N. 55th St., Birmingham.
- Tucker, Easter W., mc Ala. 13, sb 14, P. O. Box 593, Fairfield.
- Tucker, William C., mc Long Is. 42, sb 43, Norwood Hosp., Birmingham.
- Turlington, Lee F., mc Pa. 14, sb 15, 1922 10th Ave. S., Birmingham.
- Tyler, Richard E., mc Emory 28, sb 28, 1601 N. 25th St., Birmingham.
- Underwood, James W., mc Emory 36, sb 38, 811 S. 20th St., Birmingham.
- Underwood, S. Sellers, mc Tulane 17, sb 17, Med. Arts Bldg., Birmingham.
- Upchurch, Samuel Earl, mc Vanderbilt 33, recip. Tenn. 47, 2211 Highland Avenue, Birmingham.
- Vance, James Glenn, mc Ala. 05, cb Tuscaloosa 05, Massey Bldg., Birmingham.
- Wainwright, Samuel P., mc Tulane 22, sb 23, 2501 N. 16th Ave., Birmingham.
- Waldrop, R. W., mc Louisville 96, cb 97, Bessemer.
- Walker, Alfred A., mc Cornell 05, cb 05, Highland Plaza Apts., Birmingham.
- Wallace, Samuel H., mc Ala. 11, sb 11, 9 N. 55th St., Birmingham.
- Wallace, Samuel H., Jr., mc Wash. Univ. 39, recip. Mo. 41, 9 N. 55th St., Birmingham.
- Ward, Henry Silas, mc Univ. Nashville 98, cb Blount 99, 1601 N. 25th St., Birmingham.
- Ward, James Keene, mc Cornell 43, sb 44, Box 2896, Woodlawn Sta., Birmingham.
- Ward, Walter Rowland, mc Chattanooga 00, cb Tuscaloosa 00, Martin Bldg., Birmingham.
- Warren, William E., mc Ala. 05, cb DeKalb 05, Mentone.
- Warrick, Geo. W., mc Rush 33, sb 34, 900 S. 20th St., Birmingham.
- Warrick, William D., mc Rush 34, sb 35, 2121 Highland Ave., Birmingham.
- Watkins, Miles A., mc Tulane 09, sb 10, Comer Bldg., Birmingham.
- Waterston, Charles, mc Tulane 09, sb 11, Empire Bldg., Birmingham.
- Weaver, Jerome A., mc Wash. Univ. 39, recip. Mo. 46, 9 N. 55th St., Birmingham.
- Weaver, Thomas H., mc George Washington Univ. 40, NBE 44, 906 Prince Street, Alexandria, Va.
- Welch, Oliver W., mc Harvard 33, sb 37, Fairfield.
- West, Otus T., mc Northwestern 40, sb 40, Employees' Hospital, Fairfield.
- Wiesel, Bertram, mc Pa. 37, sb 37, Med. Arts Bldg., Birmingham.
- Wiley, Clarence C., mc Baltimore 08, sb 09, Woodward Bldg., Birmingham.
- Wilkinson, David Leonidas, mc Tulane 94, cb Autauga 94, Farley Bldg., Birmingham.

Wilks, Arthur E., mc Ala. 09, sb 09, 104 Second Ave., Powderly Sta., Birmingham.
Williams, Howard Bailey, mc Tulane 35, sb 36, 2121 Highland Ave., Birmingham.
Williams, James H., mc Rush 36, sb 36, Employees Hospital, Fairfield.
Williams, William J., mc Baylor 41, NBE 43, Nigeria, Africa.
Williamson, Byrn, mc Tenn. 36, recip. Tenn. 38, 2930 N. 12th Avenue, Birmingham.
Williamson, George William, mc Vanderbilt 00, sb 09, Bessemer.
Wilson, Charles Henry, mc Tulane 35, sb 35, 2144 Highland Ave., Birmingham.
Wilson, Cunningham, mc Pa. 84, cb 84, 2712 Hanover Circle, Birmingham.
Wilson, Frank C., mc Tulane 20, sb 20, Med. Arts Bldg., Birmingham.
Wilson, Jos. D., mc Washington Univ. 26, recip. Ohio 31, 2205 Highland Ave., Birmingham.
Wilson, Luther Elgin, mc Pa. 11, sb 13, Woodward Bldg., Birmingham.
Wilson, Ollie E., mc Ala. 10, sb 10, 1621 28th St., Fairview Sta., Birmingham.
Winn, Lochlin Minor, mc Tulane 00, sb 00, 1015 S. 22nd Street, Birmingham.
Wiygul, C. Harrison, mc Emory 37, recip. Ga. 39, Employees' Hospital, Fairfield.
Woodall, Paul S., mc Pa. 33, recip. Ill. 37, 811 S. 20th St., Birmingham.
Woods, Arthur W., mc Loyola 38, recip. Ill. 40, Woodward Building, Birmingham.
Woodson, Lewis G., Jr., mc Jefferson 20, sb 21, 1124 S. 20th St., Birmingham.
Woodson, Richard Carlisle, mc Tulane 04, cb Walker 06, Woodward Bldg., Birmingham.
Word, Samuel Buford, mc LSU 36, recip. Miss. 37, 929 S. 20th St., Birmingham.
Wright, Duward O., mc Northwestern 30, sb 30, Med. Arts Bldg., Birmingham.
Wright, Solon W., mc Ala. 11, sb 11, Realty Bldg., Bessemer.
Yeager, Otis Wayne, mc Emory 39, sb 41, 2250 Highland Ave., Birmingham.
Yelton, Chestley Lee, mc Univ. Louisville 37, recip. Ky. 38, 1807 27th Street, Ensley, Birmingham.
Young, Allen C., mc Queen's Univ. 36, recip. D. C. 41, 630 N. 19th Street, Bessemer.
Total 475

PHYSICIANS NOT MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Ballard, Edward H. (col.), mc Howard 26, sb 27, 1420 7th Ave. N., Birmingham.
Berry, James C., mc S. C. 95, cb 95, Rt. 5, Birmingham.
Bradford, Ferd D. (col.), mc Meharry 13, sb 13, 1630 N. 4th Ave., Birmingham.
Brewer, Henry H. (col.), mc Howard Univ. 35, recip. Kansas 38, 1410 Avenue F, Birmingham.
Broughton, N. J. (col.), mc Meharry 05, sb 05, 133 So. 61st St., Birmingham.
Brown, Walter L. (col.), mc Meharry 15, sb 15, 310 S. 23rd St., Birmingham.
Bryant, Henry Clay (col.), mc Univ. Chicago 11, sb 12, 310 N. 18th St., Birmingham.
Burwell, Edmund S., mc Harvard 20, recip. Ga. 41, 1220 S. 33rd St., Birmingham.
Clements, Merit DeWitt, mc Tulane 12, sb 12, 1012 S. 26th Street, Birmingham.
Dale, Henry L. (col.), mc Meharry 43, recip. Tenn. 44, 800 S. 23rd St., Birmingham.
Dawkins, James T., mc Ala. 09, sb 09, Ramsey-McCormack Bldg., Ensley, Birmingham.
Demby, Lorenzo S. (col.), mc Meharry 25, sb 26, Bessemer.
Dozier, Byron, mc Barnes 97, cb Elmore 00, 11 N. 21st St., Birmingham.

Drake, Wm. L. (col.), mc Meharry 25, sb 25, 5931 Avenue D., Fairfield.
Elkouire, Haickel A., mc Univ. Nashville 01, cb 06, 1625 S. 12th Ave., Birmingham.
Fields, Abijah C., mc Md. 25, sb 26, 1903½ Avenue E, Ensley, Birmingham. (Licensed revoked April 24, 1945.)
Fields, Elbert T., mc Bellevue 99, cb 99, 1903½ Avenue E, Ensley, Birmingham.
Giscombe, Cecil Stanley (col.), mc Meharry 16, sb 16, 4238 2nd Ave. N., Avondale.
Green, Anderson C., mc Ala. 14, sb 14, 2911 N. 16th St., Birmingham.
Hagler, Prewett L., mc Ala. 91, cb Tuscaloosa 91, 20 N. 2nd Ave., Birmingham.
Hancock, Meda W., mc Univ. South 08, sb 09, Powhatan.
Hankins, John M., mc Univ. Nashville 07, sb 07, 6609 1st Ave., Birmingham.
Hanna, Henry P., mc Ala. 12, sb 13, Martin Bldg., Birmingham.
Harris, Samuel F. (col.), mc Meharry 19, recip. Ky. 26, 400 N. 17th St., Birmingham.
Huey, Ben Maclin, mc Emory 23, sb 24, 714 20th Street, Ensley, Birmingham.
Hutchinson, John E. (col.), mc Meharry 30, recip. Ga. 37, 400 N. 17th St., Birmingham.
Johnson, Roy E., mc Vanderbilt 09, sb 09, 7748 S. 1st Avenue, Birmingham.
Kincaid, John L., mc Ala. 12, sb 12, Bessemer.
Lilly, Robert E., mc Vanderbilt 25, recip. Tenn. 28, Box 181, Bessemer.
Maclin, Robert B. (col.), mc Meharry 05, cb Tuscaloosa 05, 2815 29th Ave. N., Birmingham.
Matthews, Herbert O. (col.), mc Howard 19, recip. Ind. 37, 103½ N. 21st St., Bessemer.
May, Frank H., mc Univ. South 98, cb Marion 99, 1617 N. 5th Avenue, Birmingham.
McCall, Marion G. (col.), mc Michigan 21, sb 23, 400 N. 17th St., Birmingham.
McCay, Timothy Cleveland, mc Ala. 15, sb 15, Pinson.
McPherson, Charles A. J. (col.), mc Meharry 17, sb 17, 400 N. 17th St., Birmingham.
Merritt, Thomas E., mc Jefferson 37, sb 38, Flattop.
Minderhout, Will John, mc Chicago M. & S. 21, recip. Ill. 33, 601-23rd St., Ensley, Birmingham.
Mitchell, Aldus S. (col.), mc Meharry 27, recip. Tenn. 28, 2813 29th Ave. N., Birmingham.
Moten, Pierce S. (col.), mc Meharry 06, cb 06, 400 N. 17th Street, Birmingham.
Newman, John Henry, mc Chicago Col. Osteopathy 33, sb 33, Woodward Bldg., Birmingham.
Patterson, Richard R., mc Queens Univ. 36, sb 39, Empire Building, Birmingham.
Plump, Ad Wimbs (col.), mc Meharry 28, recip. Tenn. 32, 216 6th Ave. S., Birmingham.
Porter, Daniel W. (col.), mc Meharry 05, cb Walker 06, 4315 N. 9th Ave., Birmingham.
Ragsdale, M. C., mc Univ. Nashville 05, sb 06, Bessemer.
Robertson, James Kelly (col.), mc Leonard 10, recip. Ga. 23, 1728 20th St., Ensley, Birmingham.
Shepherd, Samuel T., mc Atlanta P. & S. 02, cb Walker 03, 4107 Terrace R., Birmingham.
Simpson, Frank S. (col.), mc Leonard 02, cb Russell 02, 421½ 17th St., Ensley, Birmingham.
Sims, Thos., mc Tulane 23, sb 23, Fairfield.
Springer, Homer C., mc Okla. 31, recip. Okla. 32, 630 N. 19th Street, Bessemer.
Stephens, Joseph H., mc Ala. 15, sb 15, 515 S. 55th Street, Birmingham.
Swan, Lionel F. (col.), mc Howard 39, recip. N. C. 43, 829 S. 15th St., Birmingham.
Trammell, Virgil, mc Ala. 12, sb 12, Huffman Rd., Rt. 6, Birmingham.
Ussery, Claudius Jackson, mc Tulane 21, sb 21, 1630 33rd St., Ensley, Birmingham.
Van De Voort, Horace, mc Ala. 10, sb 13, Bessemer.
White, Charles Peyton, mc Memphis 09, sb 13, Labuco.

Whorton, William W., mc Vanderbilt 99, cb Marshall 00, Pratt City.
Woodall, P. H., mc Mich. 96, sb 00, Frank Nelson Bldg., Birmingham.
Young, T. H., mc Tulane 03, cb Lamar 03, 2 N. 60th St., Birmingham.
Total 58

(38) LAMAR COUNTY Birmingham 1877

President—R. H. Redden Sulligent
Vice-President—A. W. Clanton Millport
Secretary-Treasurer—W. L. Box Sulligent, Rt. 2
County Health Officer—W. L. Box (Act.) Sulligent, Rt. 2

Censors—J. A. Jackson, Chairman, Sulligent; J. M. Roberts, Vernon; C. A. Davis, Kennedy; W. L. Box, Sulligent, Rt. 2; L. S. Coleman, Millport.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Box, W. L., mc Ala. 06, sb 06, Sulligent, Rt. 2.
Clanton, A. W., mc Miss. 07, cb 07, Millport.
Coleman, Luther S., ng, sb 09, Millport.
Davis, Charles A., mc Ala. 12, sb 12, Kennedy.
Jackson, John A., mc Memphis Hosp. 99, cb 99, Sulligent.
McClure, Herbert A., mc Atlanta 15, sb 15, Mayo, Fla.
Redden, Raymond Hollis, mc Memphis Hosp. 01, cb 01, Sulligent.
Roberts, John Monroe, mc Ala. 07, cb 07, Vernon.
Savage, Victor, mc Vanderbilt 89, cb Fayette 89, Kennedy.
Sizemore, D. M., mc Univ. Nashville 07, cb 07, Sulligent.
Total 10

PHYSICIANS NOT MEMBERS

Collins, Francis A., mc Memphis Hosp. 92, cb 92, Beaverton.
Total 1

(39) LAUDERDALE COUNTY Tuscaloosa 1887

President—E. W. Gray Florence
Secretary-Treasurer—H. W. Cheney Florence
County Health Officer—R. E. Harper* Florence

Censors—H. M. Simpson, Chairman, Florence; T. L. Bennett, Jr., Florence; Wyatt Simpson, Florence; W. C. Kennedy, Florence; L. C. Price, Florence.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Alexander, William W., mc Vanderbilt 31, recip. Tenn. 34, Florence.
Bayles, Lewis Eugene, mc Ala. 11, sb 11, Anderson.
Bayles, Louie Earl, mc Tulane 35, sb 35, Florence.
Bennett, Thos. Lee, Jr., mc Tulane 29, sb 29, Florence.
Brown, Harry G., mc Vanderbilt 39, recip. Tenn. 47, Florence.
Brown, John Richard, mc Washington Univ. 32, recip. Mo. 35, Florence.
Cashman, George A., mc Columbia P. & S. 19, recip. N. Y. 41, Florence.
Cheney, Henry W., mc Northwestern 92, recip. Ill. 42, Florence.
Cloyd, T. D., mc Grant 08, recip. Tenn. 23, Florence.
Cotton, Spencer F., mc Ala. 09, sb 14, Lexington.
Dunn, Milton C., mc Tenn. 41, recip. Tenn. 42, Florence.
Gray, Edward W., mc Ala. 09, sb 10, Florence.
Jackson, Alva A., mc Northwestern 11, sb 12, Florence.
Jackson, Nial E., mc Long 1s. 42, sb 43, Florence.

*See also Colbert County.

Kennedy, William C., Jr., mc Columbia Univ. 28, recip. N. Y. 38, Florence.
Moore, Wm. Roscoe, mc Memphis Hosp. 08, sb 07, Florence.
Norvell, Lester R., mc Tenn. 44, recip. Miss. 46, Florence.
Price, Lance C., mc George Washington Univ. 33, sb 37, Florence.
Rca, John W., mc Univ. Tenn. 39, recip. Tenn. 46, Sheffield.
Roberts, Shaler S., mc Atlanta 14, sb 14, Florence.
Simpson, Harry Moody, mc Ala. 15, sb 16, Florence.
Simpson, Wyatt C., mc Harvard 31, NBE 38, Florence.
Waddell, John R., mc Vanderbilt 15, sb 15, Rogersville.
Walden, Joe D., mc Rush 37, sb 38, Florence.
Total 24

PHYSICIANS NOT MEMBERS

Belue, John C., ng, cb 90, Rogersville. (Retired.)
Hicks, Leonard J. (col.), mc Meharry 29, recip. Tenn. 33, Florence.
Long, Henry (col.), mc Meharry 20, sb 20, Florence.
Rousseau, Wm. R., mc Ala. 17, sb 17, Rogersville.
Stutts, Henry Lee, mc Ala. 00, cb 01, St. Joseph, Tenn., Rt. 1.
Stringer, Myron Scott, mc Emory 23, recip. Ga. 28, Florence.
Taylor, J. W., mc Tenn. 15, sb 15, Lexington.
Total 7

(40) LAWRENCE COUNTY Birmingham 1877

President—S. R. Sanders Moulton
Vice-President—W. W. Irwin Moulton
Secretary-Treasurer—L. R. Murphree Moulton
County Health Officer—L. R. Murphree* Moulton

Censors—J. A. Ussery, Chairman, Courtland; R. P. Irwin, Moulton; J. P. Dyar, Moulton; W. R. Taylor, Town Creek; S. R. Sanders, Moulton.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Dyar, James P., mc Tulane 23, recip. Tenn. 24, Moulton.
Farish, Clarence G., mc Tulane 33, sb 33, Moulton.
Irwin, Robert P., mc Ala. 10, sb 09, Moulton.
Irwin, Willard W., mc Emory 36, sb 36, Moulton.
Sanders, Samuel R., mc Ala. 08, sb 08, Moulton.
Taylor, Woodie R., mc Univ. Nashville 10, sb 10, Town Creek.
Ussery, James A., mc Ala. 15, sb 15, Courtland.
Total 7

PHYSICIANS NOT MEMBERS

None

(41) LEE COUNTY Huntsville 1880

President—B. F. Thomas, Sr. Auburn
Vice-President—M. W. Sanford Opelika
Secretary-Treasurer—William Askew Auburn
County Health Officer—William Askew (Act.) Auburn

Censors—B. F. Thomas, Sr., Chairman, Auburn; J. G. Palmer, Opelika; B. S. Bruce, Opelika; G. W. Blackshear, Opelika; W. S. Owsley, Opelika.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Askew, William, mc Wash. Univ. 37, recip. Mo. 39, Auburn.
Blackshear, Gill Wyeth, mc Tulane 23, recip. La. 26, Opelika.
Boyd, Frank H., mc Emory 30, sb 30, Opelika.
Bruce, Byron S., mc Univ. Texas 11, recip. Texas 20, Opelika.

*See also Morgan County.

Burkhead, DeWitt, mc Tulane 20, recip. La. 24, Opelika.
Dennis, Jephtha Weldon, mc Emory 27, sb 27, Auburn.
Dupree, John Wesley, Jr., mc Emory 36, recip. Ga. 38.
Opelika, Rt. 2.

Floyd, Henry T., mc Johns Hopkins 23, recip. Ind. 41, Auburn.

Henderson, Ernest A., mc Univ. Okla. 38, recip. Okla. 40, Opelika.

Johnson, George Edwin, mc Rush 40, sb 41, Auburn.
McLain, Andrew D., mc Ala. 01, cb Chambers 01, Salem.
Owsley, Lawrence H., mc Emory 40, recip. Va. 44, Opelika.

Owsley, Winfield S., mc Emory 24, sb 25, Opelika.
Palmer, Julian G., mc Tulane 23, sb 23, Opelika.
Samford, Millard W., mc Emory 34, recip. Ga. 36, Opelika.
Thomas, Benjamin F., mc Emory 17, sb 17, Auburn.

Thomas, Benjamin F., Jr., mc Emory 43, sb 44, Auburn.
Walker, James Elliott, mc Univ. Louisville 36, recip. Ky. 41, Opelika.

Warren, Thurston A., mc Baylor 29, recip. La. 32, Auburn.

Total 19

PHYSICIANS NOT MEMBERS

Darden, John W. (col.), mc Leonard 01, sb 02, Opelika.
Lindsey, Eugene A. (col.), mc Meharry 08, sb 09, Opelika.
Steele, Frank E. (col.), mc Howard 35, recip. Tenn. 45, Opelika.

Total 3

(42) LIMESTONE COUNTY

Birmingham 1877

President—H. A. Darby Athens
Vice-President—S. J. Nethery Belle Mina
Secretary-Treasurer—J. S. Crutcher, Jr. Athens
County Health Officer—A. M. Shelamer* Athens

Censors—A. J. DuPuy, Chairman, Athens; J. O. Belue, Athens; C. V. Mayhall, Athens; H. A. Darby, Athens; J. S. Crutcher, Jr., Athens.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Belue, Julius O., mc Vanderbilt 15, sb 15, Athens.
Crutcher, John Sims, Jr., mc Vanderbilt 29, recip. Tenn. 34, Athens.

Darby, Henry Alonzo, mc Ala. 01, cb 01, Athens.
DuPuy, Alton J., mc Baylor 27, recip. Texas 41, Athens.
Jackson, David E., mc Tenn. 38, recip. Tenn. 40, Lester.
Maddox, John Willard, mc Tenn. 21, recip. Tenn. 30, Ardmore.

Maples, Joseph Hemans, mc Univ. Nashville 05, cb 05, Athens.
Maples, William Ellis, mc Univ. Nashville 03, cb 03, Athens.

Mayhall, Clifford Vernon, mc Ala. 15, sb 15, Athens.
Nethery, Sidney J., mc Univ. Col. 34, sb 35, Belle Mina.
Pettus, J. J., mc Ala. 08, sb 08, Belle Mina.

Powers, Alvin Dow, mc Ala. 11, sb 11, Athens.
Whitfield, Joe T., mc Univ. Tenn. 35, recip. Tenn. 46, Elkmont.

Total 13

PHYSICIANS NOT MEMBERS

Peyton, Wade H. (col.), mc Meharry 22, recip. Tenn. 29, Athens.

Total 1

(43) LOWNDES COUNTY

Mobile 1878

President—W. L. Stagers Benton
Vice-President—Jack Kirschenfeld Ft. Deposit
Secretary-Treasurer—E. F. Leatherwood Hayneville
County Health Officer—E. F. Leatherwood Hayneville

*See also Madison County.

Censors—E. F. Leatherwood, Chairman, Hayneville; W. L. Stagers, Benton; Jack Kirschenfeld, Ft. Deposit.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Kirschenfeld, Jack, mc New York Univ. 43, NBE 46, Ft. Deposit.

Leatherwood, Elbert F., mc Ala. 07, cb 07, Hayneville.

Stagers, William L., mc Ala. 16, sb 20, Benton.

Total 3

PHYSICIANS NOT MEMBERS

Coleman, Henry Neal, ng, sb 01, Ft. Deposit.

Total 1

(44) MACON COUNTY

Selma 1879

President—G. C. Yancey Tuskegee
Vice-President—H. S. Holloway Notasulga
Secretary-Treasurer—Murray Smith Tuskegee
County Health Officer—Murray Smith Tuskegee

Censors—P. M. Lightfoot, Chairman, Shorter; T. F. Taylor, Tuskegee; H. H. Winters, Tuskegee; B. W. Booth, Shorter; G. C. Yancey, Tuskegee.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Booth, Benson W., mc Ala. 05, cb Autauga 05, Shorter.
Holloway, Hosa Sellers, mc Tulane 41, sb 42, Notasulga.
Lightfoot, Philip Malcolm, mc Ala. 00, cb 00, Shorter.
Smith, Murray, mc Emory 29, sb 29, Tuskegee.

Taylor, Thomas F., mc Ala. 04, cb Mobile 04, Tuskegee.
Winters, Harry Hall, mc Tulane 24, recip. La. 26, Tuskegee.

Yancey, Gautier C., mc Ala. 19, sb 19, Tuskegee.

Total 7

PHYSICIANS NOT MEMBERS

Chenault, John W. (col.), mc Univ. Minn. 30, recip. Ill. 36, Tuskegee Institute.

Dibble, Eugene Heriot (col.), mc Howard 19, recip. D. C. 21, Tuskegee Institute.

Dwiggins, Horace Greeley (col.), mc Meharry 34, NBE 43, Veterans' Hosp., Tuskegee.

Thompson, Charleton, mc P. & S. Atlanta 99, cb 99, Tuskegee.

Walwyn, Cyril A. (col.), mc Howard 28, recip. D. C. 37, Tuskegee Institute.

Wilkerson, Leonard Boyce, mc Ky. 02, recip. Ky. 21, Shorter.

Williams, Joshua W. (col.), mc Howard Univ. 32, recip. Ga. 36, Veterans Hospital, Tuskegee.

Total 7

(45) MADISON COUNTY

Birmingham 1877

President—W. G. McCown Huntsville
Vice-President—J. L. Jordan Huntsville
Secretary-Treasurer—R. C. Bibb Huntsville
County Health Officer—A. M. Shelamer Huntsville

Censors—M. R. Moorman, Chairman, Huntsville; O. J. Brooks, Huntsville; C. A. Grote, Huntsville; J. B. Laughlin, Huntsville; W. F. Jordan, Huntsville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Adams, George W., mc Washington Univ. 40, recip. Mo. 42, Huntsville.

Bibb, Robert C., mc Tulane 40, recip. La. 46, Huntsville.
Brooks, Osceola Judkins, mc Tulane 93, cb Elmore 93, Huntsville.

Caldwell, Edwin Valdivia, mc Ala. 07, sb 06, Huntsville.
Caldwell, Samuel Welch, mc N. Y. Univ. 40, NBE 46, Huntsville.

Carpenter, James Allen, mc Ala. 96, cb 96, New Hope.
 Carpenter, James L., mc Vanderbilt 35, sb 35, New Hope.
 Dickey, Edwin W., mc Chattanooga 97, cb Morgan 03, Hazel Green.
 Dilworth, Thos. E., Jr., mc Vanderbilt 25, recip. Tenn. 26, Huntsville.
 Duncan, Maurice Miller, mc Ala. 14, sb 14, Huntsville.
 Grayson, Ambrose T., mc Chattanooga 06, sb 06, New Market.
 Grote, Carl A., mc Ala. 12, sb 12, Huntsville.
 Hamm, Pat, mc Univ. Ark. 41, recip. Ark. 45, Huntsville.
 Holliman, James D., mc Tenn. 24, sb 25, Huntsville.
 Jordan, James L., Jr., mc Tulane 42, sb 43, Huntsville.
 Jordan, William F., mc Jefferson 09, sb 09, Huntsville.
 Kyser, James Allen, mc Tulane 11, sb 11, Madison.
 Lary, John H., mc Tulane 35, sb 35, Huntsville.
 Laughlin, J. B., mc Va. 12, pro forma USN 20, Huntsville.
 McCown, William G., mc Vanderbilt 28, recip. Tenn. 29, Huntsville.
 McKissack, Wm. Milton, mc Univ. Chicago 27, sb 27, Huntsville.
 Moorman, John D., mc Harvard 36, sb 40, Huntsville.
 Moorman, Marion Ridley, mc Univ. South 00, cb 01, Huntsville.
 Parker, Harry J., mc Loyola Univ. 37, recip. Ill. 41, Huntsville.
 Russell, Christopher H., mc Ala. 12, sb 13, Huntsville.
 Shelamer, Arthur McKee, mc S. C. 28, recip. S. C. 35, Huntsville.
 Sentell, James H., mc Tenn. 04, cb Jackson 06, New Hope.
 Summers, William Pleasant, mc Univ. Nashville 05, recip. Tenn. 19, Toney.
 Walker, H. O., mc Vanderbilt 21, sb 21, Huntsville.
 Walker, Moody, mc Vanderbilt 26, recip. Tenn. 34, Huntsville.
 Whitaker, James E., mc Tulane 22, sb 23, Huntsville.
 Wikle, Jesse Ollie, mc Ala. 15, sb 15, Madison.
 Williamson, Edwin Oliver, mc Chattanooga 98, cb 98, Gunley.
 Total 33

PHYSICIANS NOT MEMBERS

Beard, Robert S. (col.), mc Meharry 22, recip. Tenn. 24, Huntsville.
 Total 1

(46) MARENGO COUNTY

Birmingham 1877

President—F. S. Whitfield Demopolis
 Vice-President—W. E. Allen Sweet Water
 Secretary-Treasurer—C. E. Kimbrough Linden
 County Health Officer—C. E. Kimbrough (Act.) Linden

Censors—W. E. Allen, Chairman, Sweet Water; T. H. Gaillard, Magnolia; C. E. Kimbrough, Linden; A. H. Bobo, Demopolis; C. J. Lidikay, Demopolis.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Allen, Walter Earl, mc Tenn. 16, sb 16, Sweet Water.
 Bobo, Arlington H., mc Ala. 11, sb 11, Demopolis.
 Cameron, Turner C., mc Ala. 07, sb 07, Faunsdale.
 Cocke, William T., mc Ala. 03, cb Hale 03, Demopolis.
 Dunning, Guy Jennings, mc Ala. 11, sb 11, Linden.
 Dunning, Guy J., Jr., mc Tulane 42, NBE 46, Linden.
 Gaillard, Thos. Hamilton, mc Ala. 06, cb Mobile 06, Magnolia.
 Hand, Leslie M., mc Ky. 04, cb 04, Demopolis.
 Kimbrough, Cecil Emmett, mc Tulane 26, sb 26, Linden.
 Lidikay, Charles J., mc Univ. Louisville 94, recip. Mo. 45, Demopolis.
 Rhodes, Chas. E., mc Univ. South 05, cb 06, Jefferson.
 Stallworth, Clarke Jackson, mc Md. 12, sb 12, Thomaston.

Whitfield, Fred S., Jr., mc Wash. Univ. 39, recip. Mo. 46, Demopolis.
 Williams, Gerald N., mc Tulane 32, Nat. Ex. Bd. 33, Linden.

Total 14

PHYSICIANS NOT MEMBERS

Lee, Earl F., mc Ala. 03, cb 04, Rt. 1, Box 41, Gastonburg.
 Nutter, Robert A., mc Va. 40, recip. Va. 42, Demopolis.
 Total 2

(47) MARION COUNTY

Montgomery 1888

President—R. L. Hill Winfield
 Vice-President—R. B. Garlington Brilliant
 Secretary-Treasurer—M. S. White Hamilton
 County Health Officer—M. S. White (Act.) Hamilton

Censors—R. B. Garlington, Chairman, Brilliant; M. S. White, Hamilton; M. C. Hollis, Winfield; S. S. Busby, Hamilton; E. W. Couch, Winfield.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Brooks, James Otis, mc Tenn. 35, recip. Tenn. 39, Hamilton.
 Brown, James Rias, mc Memphis Hosp. 12, sb 13, Rt. 1, Bexar.
 Burleson, John Rufus, mc Memphis Hosp. 97, cb 97, Hamilton.
 Busby, S. S., mc Ala. 08, sb 08, Hamilton.
 Couch, Edwin Wheeler, mc Univ. Tenn. 42, recip. Tenn. 46, Winfield.
 Garlington, Robert Bernard, mc Emory 21, sb 21, Brilliant.
 Hill, Robert L., mc Memphis Hosp. 05, cb 05, Winfield.
 Hollis, Murray C., mc Memphis Hosp. 08, sb 08, Winfield.
 Wear, Thomas Ralph, mc Wash. Univ. 42, recip. Mo. 46, Hamilton.
 White, Marvin S., mc Louisville 03, cb 03, Hamilton.
 Wilson, John L., mc Ala. 11, sb 12, Hackleburg.
 Total 11

PHYSICIANS NOT MEMBERS

Cochran, William W., mc Chattanooga 05, cb 05, Brilliant.
 Total 1

(48) MARSHALL COUNTY

Anniston 1886

President—B. N. Lavender Albertville
 Vice-President—A. G. Finlay Guntersville
 Secretary-Treasurer—Lee Weathington Guntersville
 County Health Officer—Lee Weathington Guntersville

Censors—A. L. Isbell, Chairman, Albertville; J. M. Crawford, Arab; H. E. Barker, Boaz; B. C. Scarbrough, Albertville; A. G. Finlay, Guntersville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Barker, Hampton E., mc Emory 32, recip. Ga. 34, Boaz.
 Barnard, Radford M., mc Tenn. 26, sb 27, Arab.
 Bixler, Thomas Jenkins, mc Emory 43, recip. Ga. 46, Guntersville.
 Couch, Ezekiel H., mc Vanderbilt 05, cb 05, Guntersville.
 Crawford, Jas. M., mc Tenn. 29, sb 30, Arab.
 Fennell, Robt. F., mc Tulane 11, sb 11, Guntersville. (Retired).
 Finlay, Andrew G., mc Univ. Col. 29, recip. Col. 33, Guntersville.
 Horsley, Henry L., mc Univ. Nashville 04, cb 04, Boaz.
 Huckaby, W. R., mc Ala. 15, sb 15, Guntersville.
 Hunt, Marston T., mc Tenn. 34, sb 34, Boaz.
 Hyatt, Ernest M., mc Ala. 11, sb 11, Albertville.
 Isbell, A. L., mc Ala. 12, sb 12, Albertville.
 Jordan, D. C., mc Memphis Hosp. 92, cb 92, Guntersville. (Retired).

Lavender, Belton N., mc Tenn. 38, recip. Tenn. 39, Albertville.
Martin, Thos. E., mc Vanderbilt 25, recip. Tenn. 27, Gunter-
ville.
Noel, William East, mc Grant 99, cb 00, Boaz. (Retired.)
Rogers, Harold Lawton, mc Rush 35, sb 35, Albertville.
Scarborough, B. C., mc Tenn. 11, sb 11, Albertville.
Venning, Edward W., mc Univ. Va. 38, recip. Va. 39, Gun-
tersville.
Watwood, James A., mc Emory 25, sb 25, Arab.
Weatherington, Lee, mc Ala. 13, sb 13, Gunter-ville.
Total 21

PHYSICIANS NOT MEMBERS

None

(49) MOBILE COUNTY

Mobile 1876

President—F. T. Boudreau..... Mobile
Vice-President—J. U. Reaves..... Mobile
Secretary—W. W. Scales..... Mobile
Treasurer—C. A. Baumhauer..... Mobile
County Health Officer—O. L. Chason..... Mobile

Censors—J. M. Weldon, Chairman, Mobile; G. O. Se-
grest, Mobile; A. M. Cowden, Crichton; L. W. Hollis, Mo-
bile; A. A. Wood, Mobile.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Acker, Paul Jerome Moeris, mc Ala. 92, cb 92, 153 Govern-
ment St., Mobile.
Adams, M. Vaun, mc Penn. 28, sb 28, 803 Government St.,
Mobile.
Amendola, Arthur A., mc St. Louis Univ. 37, recip. Tenn.
44, Merchants National Bank Bldg., Mobile.
Armistead, John Robert, mc Md. 08, sb 08, Prichard.
Baumhauer, Charles A., mc Tulane 38, sb 38, Van Ant-
werp Bldg., Mobile.
Baumhauer, Jacques H., mc Tulane 26, sb 27, 653 Govern-
ment St., Mobile.
Beck, Julius Edward, mc Ala. 12, sb 12, 103 Dauphin St.,
Mobile.
Bell, John Mac. mc Ala. 15, sb 15, 700 Government St.,
Mobile.
Blake, Theodore M., mc Ala. 00, cb 03, Toulminville.
Blake, William A., mc Emory 38, sb 38, Toulminville.
Bondurant, Eugene DuBose, mc Univ. Va. 83, cb Hale 83,
1109 Government St., Mobile.
Boudreau, Floyd T., Jr., mc Tulane 30, recip. La. 33, 103
Dauphin Street, Mobile.
Brown, Alexander John, mc St. Louis Univ. 35, recip. Mo.
36, 57 St. Francis St., Mobile.
Brown, Leland Leslie, mc Tenn. 42, recip. Tenn. 43, 1st
Nat. Bk. Bldg. Annex, Mobile.
Burke, Daniel W., Jr., mc LSU 44, recip. La. 46, Chicka-
saw.
Cawthon, Edly W., mc Ala. 08, sb 08, Plateau.
Chason, Otis L., mc Tulane 25, sb 25, 119 Conti St., Mobile.
Clarke, Norborne R., Jr., mc Penn. 26, sb 28, 1201 Spring-
hill Avenue, Mobile.
Cleveland, Claude Mastin, mc Tulane 21, sb 25, 103 Dau-
phin St., Mobile.
Cogburn, Harry Reginald, mc Ala. 13, sb 13, 56 St. Joseph
St., Mobile.
Cowden, Arthur M., mc Ala. 16, sb 16, Crichton.
Davis, Charles S., mc Univ. Ind. 27, sb 27, 1155 Springhill
Avenue, Mobile.
Dix, Albert Sidney, mc Rush 36, sb 37, 1104 Springhill
Ave., Mobile.
Dodson, James Horace, mc Ala. 14, sb 14, 103 Dauphin St.,
Mobile.
Dodson, Marion Harwood, mc Tulane 44, recip. La. 45,
Van Antwerp Bldg., Mobile.

Doehring, Erich T., mc Griefswald 21, sb 23, 1st Nat.
Bk. Bldg. Annex, Mobile.
Dowling, Herbert Bascom, Jr., mc Ala. 20, sb 20, 803 Gov-
ernment St., Mobile.
Earl, Alfred R., mc Syracuse Univ. 35, recip. N. Y. 45,
Merchants Nat. Bk. Bldg., Mobile.
Eichold, Samuel II, mc Tulane 40, recip. La. 46, Van
Antwerp Bldg., Mobile.
England, Francis Tillman, mc Tenn. 34, recip. Tenn. 36,
50 S. Franklin St., Mobile.
England, John Tillman, mc Ala. 99, cb 99, 1252 Dauphin
St., Mobile.
Farrior, Lawrence B., mc Ala. 16, sb 16, Merchants Nat.
Bk. Bldg., Mobile.
Fonde, George Heustis, mc Ala. 97, cb 97, 113 St. Francis
St., Mobile.
Fonde, William Gorgas, mc Tulane 40, recip. La. 41,
113 St. Francis St., Mobile.
Frazer, Emmett B., mc Ala. 18, sb 18, 109 N. Conception
St., Mobile.
Gaines, Marion Toulmin, mc Ala. 90, cb 92, Toulminville.
Gay, Nathaniel S., mc Ala. 00, cb 01, Whistler.
Gilchrist, Philip P., mc Tulane 42, sb 44, First Nat. Bk.
Annex, Mobile.
Graham, Joseph B., mc Univ. Va. 28, recip. Va. 32, 1317
Springfield Ave., Mobile.
Gray, Henry W., mc Ky. 03, sb 13, Crichton.
Greene, John H., mc Univ. Va. 29, recip. Va. 42, Whistler.
Gwynn, Henry B. mc Georgetown Univ. 33, recip. D. C.
46, 751 Government St., Mobile.
Haas, Toxey Daniel, mc Ala. 12, sb 12, 103 Dauphin St.,
Mobile.
Hannon, William Campbell, mc Ala. 16, sb 16, 1257 Spring-
hill Ave., Mobile.
Heard, Wilbur L. mc Ala. 14, sb 14, 109 N. Conception St.,
Mobile.
Heiter, Wm. Leslie, mc Tulane 28, sb 28, 103 Dauphin St.,
Mobile.
Henderson, Andrew D., mc Vanderbilt 29, recip. Tenn.
30, 259 St. Francis St., Mobile.
Henderson, Thos. Bain, Jr., mc S. C. 43, recip. S. C. 44,
259 St. Francis St., Mobile.
Hill, Vivian H., mc Emory 26, recip. Ga. 28, 904 Govern-
ment St., Mobile.
Hinton, Lawrence H., mc Emory 28, recip. Miss. 29, 103
Dauphin Street, Mobile.
Hollis, Lotta Winston, mc Ala. 20, sb 20, 56 St. Joseph St.,
Mobile.
Hope, John C., mc Ala. 08, sb 09, 200 Dauphin St., Mobile.
Howard, Percy John, mc Ala. 96, cb 96, 103 Dauphin St.,
Mobile.
Hudson, Victor T., Univ. Tenn. 37, recip. Tenn. 46, 1750
Cardinal Drive East, Mobile.
Inge, Francis Marion, mc Md. 10, sb 10, 14 St. Joseph St.,
Mobile.
Inge, James Tunstall, mc Univ. New York 94, cb 95, 55 S.
Joachim St., Mobile.
Ingram, Geo. H., mc Tulane 21, sb 21, Veterans Admin.,
Tuscaloosa.
Johnson, Gayle T., mc Univ. Ark. 30, recip. La. 34, 56 St.
Joseph St., Mobile.
Jones, William C., mc Ala. 07, sb 07, 103 Dauphin St., Mo-
bile.
Kilpatrick, George Carlton, mc Tulane 08, sb 15, 1001 Au-
gusta St., Mobile.
Kimbrough, J. Benjamin Burford, mc Tenn. 41, sb 42,
250 S. Georgia Ave., Mobile.
Kirklin, Marion A., mc Ala. 13, sb 13, Prichard.
Lange, Charles E. F., mc Univ. Texas 42, recip. Texas 43,
Chickasaw.
Lester, Richard P., mc Emory 25, sb 25, 103 Dauphin St.,
Mobile.
Liebeskind, Milton M., mc Univ. Tenn. 42, recip. Tenn.
43, Prichard.
Lightcap, Clement A., mc Jefferson 41, recip. La. 46,
Crichton.

- Little, Joe H., mc Emory 28, sb 28, 12 N. Jackson St., Mobile.
- Martin, Henry F., mc Vanderbilt 22, recip. Tenn. 26, 904 Government St., Mobile.
- Maury, Frank H., mc Tulane 32, recip. La. 46, Van Antwerp Bldg., Mobile.
- McCall, Daniel T., mc Louisville 94, cb Choctaw 94, 1901 Government St., Mobile.
- McClure, Herbert Cecil, mc Med. Evan. 40, NBE 42, 108 N. Conception, Mobile.
- McVay, Leon Victor, mc Ala. 15, sb 15, 200 Dauphin St., Mobile.
- Meeker, Wm. Raymond, mc Rush 19, Nat. Ex. Bd. 26, 109 N. Conception St., Mobile.
- Minnich, William C., mc Med-Chir. Phila., 04, recip. Pa. 45, Ala. Dry Dock and Ship Bldg. Co., Mobile.
- Minor, Walter H., mc Emory 29, sb 29, 354 St. Francis St., Mobile.
- Mitchell, George J., mc Tulane 39, recip. Miss. 44, 455 Government St., Mobile.
- Mohr, Charles A., mc Ala. 84, cb 92, 254 St. Anthony St., Mobile.
- Moorer, Monte LeRoy, mc Ala. 17, sb 17, 109 N. Conception St., Mobile.
- Mulherin, Hugh G., mc Univ. Ga. 29, recip. Ga. 30, 1260 Springhill Ave., Mobile.
- Murphy, Samuel S., Jr., mc Tulane 38, recip. La. 40, 56 St. Joseph St., Mobile.
- Muscat, Jos. O., mc St. Louis Univ. 31, sb 31, 255 St. Francis St., Mobile.
- Muscat, Vincent Paul, mc St. Louis Univ. 43, recip. Mo. 45, 255 St. Francis St., Mobile.
- Newburn, George W., mc Ala. 07, cb 07, Prichard.
- Newburn, George W., Jr., mc Tulane 41, sb 41, Prichard.
- Newman, Leonce D., mc Tulane 33, recip. La. 39, 50 S. Jackson St., Mobile.
- North, William E., mc Emory 40, recip. Ga. 42, Prichard.
- O'Gwynn, John C., Jr., mc Tenn. 29, recip. Tenn. 30, 1565 Dauphin St., Mobile.
- Oswalt, George Guy, mc Ala. 14, sb 14, 56 St. Joseph St., Mobile.
- Park, Milton D., mc Vanderbilt 28, recip. Tenn. 37, Chickasaw.
- Parsons, Walter S., mc McGill Univ. 17, sb 44, Merchants Nat. Bk. Bldg., Mobile.
- Fartridge, Clarence V., mc Tulane 30, sb 31, 1201 Springhill Avenue, Mobile.
- Peake, John Day, mc Univ. Va. 30, recip. Va. 32, 1208 Springhill Ave., Mobile.
- Perdue, James Devote, mc Ala. 13, sb 13, 56 St. Joseph St., Mobile.
- Peterson, James Jesse, mc Tulane 01, cb Lee 01, 103 Dauphin St., Mobile.
- Reaves, Jesse Ullman, mc Tulane 08, sb 08, 103 Dauphin St., Mobile.
- Roach, Alexander N. T., mc Univ. South 02, cb Perry 02, 911 Government St., Mobile.
- Roberts, Mack Jerome, mc Tulane 30, recip. La. 32, 103 Dauphin St., Mobile.
- Roe, Lee Wright, mc Ala. 01, cb 01, 103 Dauphin St., Mobile.
- Ross, Cecil H., mc Tenn. 16, sb 16, 359 St. Francis St., Mobile.
- Rouse, Clyde C., mc Tulane 27, recip. La. 28, 56 St. Joseph St., Mobile.
- Rowe, Harry S., mc Emory 22, sb 22, Mt. Vernon.
- Rowe, Jos. Flournoy, mc Ala. 14, sb 14, 107 S. Joachim Street, Mobile.
- Rumpanos, Socrates N., mc Duke 37, NBE 34, 1308 St. Stephens Rd., Mobile.
- Rutherford, Chas. L., mc Emory 27, sb 27, 455 Government St., Mobile.
- Sanders, J. Gillis, mc Tulane 13, sb 13, 56 St. Joseph St., Mobile.
- Saunders, Joseph H., mc Tulane 37, recip. La. 45, Merchants Nat. Bk. Bldg., Mobile.
- Savage, Charles H., mc Tulane 17, pro forma USN 19, Prichard.
- Scales, Willis West, mc Ala. 96, cb 96, 119 Conti St., Mobile.
- Schear, Raymond S., mc Tulane 42, recip. La. 46, 452 Government St., Mobile.
- Schrantz, Freeman S., mc Tenn. 40, recip. Tenn. 46, 751 Government St., Mobile.
- Segrest, Grady Oscar, mc Emory 24, sb 24, 653 Government St., Mobile.
- Sellers, David F., mc Tulane 29, recip. La. 40, 103 Dauphin St., Mobile.
- Sellers, William L., Jr., mc Wash. Univ. 36, recip. Mo. 39, 103 Dauphin St., Mobile.
- Sledge, Edward Simmons, mc Pa. 09, sb 10, 1201 Springhill Avenue, Mobile.
- Stephens, Selden H., mc Emory 23, sb 23, 14 St. Joseph St., Mobile.
- Stephens, Warren C., mc Tulane 35, sb 35, 14 St. Joseph St., Mobile.
- Sumner, Isaac C., mc Univ. Ark. 28, sb 28, 55 S. Joachim Street, Mobile.
- Sutherland, Archie Reid, mc Duke 42, NBE 46, Whistler.
- Taylor, Earle Ernest, mc Tenn. 04, cb Baldwin 04, Crichton.
- Taylor, James Leslie, mc Tulane 20, sb 21, 56 St. Joseph St., Mobile.
- Taylor, Richard V., Jr., mc Univ. Va. 10, sb 12, 1201 Springhill Avenue, Mobile.
- Terrill, Edward Chapin, mc Ala. 09, sb 10, Rt. 1, Box 210, Crichton.
- Thompson, Wm. A., mc Univ. Tenn. 04, cb Baldwin 04, Citronelle.
- Tisdale, William C., mc Tulane 18, sb 18, Mt. Vernon.
- Walker, Howard S. J., mc Memphis Hosp. 13, sb 14, 103 Dauphin St., Mobile.
- Warren, Claude M., mc Louisville 38, recip. Ky. 39, 103 Dauphin St., Mobile.
- Webb, Virginia E., mc LSU 33, recip. La. 42, 1322 Springhill Ave., Mobile.
- Webster, Harry N., Jr., mc Jefferson 41, sb 41, 113 St. Francis St., Mobile.
- Weldon, Joseph Marion, mc Ala. 13, sb 13, 455 N. Government St., Mobile.
- Williams, Guy H., mc Okla. 34, recip. Okla. 42, Merchants Nat. Bk. Bldg., Mobile.
- Wilson, John M., mc Ala. 07, sb 07, 103 Dauphin St., Mobile.
- Winsor, Carleton W., mc Univ. Mich. 28, recip. Mich. 46, Spring Hill.
- Wise, I. Milton, mc Indiana 24, recip. Ohio 26, 56 St. Joseph St., Mobile.
- Wood, Arthur A., mc Tulane 31, sb 31, 103 Dauphin St., Mobile.
- Yemm, Warren Ashley, mc Univ. Ill. 38, recip. Ill. 46, Van Antwerp Bldg., Mobile.
- Zieman, Alphonse Hays, mc Tulane 35, sb 35, 805 Government St., Mobile.
- Zieman, John Arthur, mc Tulane 40, recip. La. 45, 805 Government St., Mobile.
- Zieman, Stephen A., mc Rush 32, recip. Ill. 44, 805 Government St., Mobile.

Total 138

PHYSICIANS NOT MEMBERS

- Adams, John Thomas, mc Ala. 09, sb 09, 169 Dauphin St., Mobile.
- Ceravolo, Raphael J., mc Long Is. 37, recip. N. Y. 46, 1401 Springhill Ave., Mobile.
- Dumas, James F., mc Tulane 43, recip. La. 47, 751 Government St., Mobile.
- Estep, John Herbert, mc Emory 42, recip. Ga. 47, 109 W. Talley Ct., Mobile.
- Flippo, La Faun N., mc Ala. 04, cb Franklin 07, 306 Dauphin Street, Mobile.

Foster, John E., mc LSU 44, recip. La. 45, City Hospital, Mobile.
Franklin, James Alexander (col.), mc Michigan 14, sb 15, 570 Davis Avenue, Mobile.
Goode, E. B. (col.), mc Meharry 28, recip. Tenn. 29, 1066 Davis Ave., Mobile.
Gumbs, Oliver S. (col.), mc Meharry 41, recip. Tenn. 42, 500 Dauphin St., Mobile.
Hope, John Crawford, Jr., mc Tulane 39, recip. La. 46, 1308 St. Stephens Rd., Mobile.
Kebe, George B. (col.), mc Meharry 38, recip. Tenn. 41, 568½ Dauphin St., Mobile.
Lane, Leonard T., mc Ala. 12, sb 12, Prichard.
Marshall, Wallace S., mc Northwestern 32, recip. Wis. 43, 103 Dauphin St., Mobile.
Miller, Irvin S., mc Columbia Univ. 26, recip. Va. 44, 56 St. Joseph St., Mobile.
Moss, John Edward, mc Duke 40, recip. Tenn. 47, Van Antwerp Bldg., Mobile.
Oden, Georgia E. (col.), mc Howard 32, NBE 33, 1258 Congress St., Mobile.
Odom, Earle T. (col.), mc Meharry 34, recip. Tenn. 44, 500 Dauphin St., Mobile.
Peters, Robert H., mc Ala. 94, cb 95, Mobile.
Stevens, Thomas A. (col.), mc Howard 25, recip. Pa. 40, 1258 Congress St., Mobile.
Tapia, Mose Hudson, mc Ala. 20, sb 20, Bayou La Batre.
Taylor, John Francis (col.), mc Meharry 16, sb 16, 505 St. Michael St., Mobile.
White, Meredith, mc Am. Sc. Osteopathy 10, sb 10, 14 St. Joseph St., Mobile.
Wilkinson, G. H. (col.), mc Meharry 97, cb 97, 608 Congress St., Mobile.
Total 23

(50) MONROE COUNTY

Birmingham 1877

President—R. A. Smith Monroeville
Vice-President—J. J. Dailey Tunnel Springs
Secretary-Treasurer—W. W. Eddins Monroeville
County Health Officer—W. W. Eddins (Act.) Monroeville

Censors—E. R. Cannon, Chairman, Vredenbergh; T. E. Dennis, Monroeville; W. W. Eddins, Monroeville; W. A. Stallworth, Frisco City; J. J. Dailey, Tunnel Springs.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Broughton, William Edward, mc Louisville 10, sb 10, Perdue Hill.
Cannon, Edmund R., mc Ala. 05, cb Wilcox 05, Vredenbergh.
Dailey, John Jonathan, mc Ala. 06, cb 06, Tunnel Springs.
Dennis, Thomas Edmund, mc Univ. South 08, sb 08, Monroeville.
Eddins, Woodrow W., mc Rush 37, sb 37, Monroeville.
Nettles, Thomas Earl, mc Hahemann 43, recip. Miss. 46, Monroeville.
Smith, Rayford A., mc Ala. 12, sb 13, Monroeville.
Stallworth, William A., mc Emory 24, sb 24, Frisco City.
Total 8

PHYSICIANS NOT MEMBERS

Cobb, Wm. Floyd, mc Vanderbilt 95, cb 98, Frisco City.
Gaillard, Samuel S., mc Ala. 10, sb 10, Rt. 1, Frisco City.
Stacey, Andrew G., mc Ky. 05, cb 06, Evergreen, Rt. 1.
Total 3

(51) MONTGOMERY COUNTY

Eufaula 1878

President—J. W. Davis Montgomery
Vice-President—J. A. Martin Montgomery

Secretary—D. B. Monsky Montgomery
Treasurer—F. C. Stevenson Montgomery
County Health Officer—A. H. Graham Montgomery

Censors—C. K. Weil, Chairman, Montgomery; D. S. Hagood, Montgomery; F. W. Riggs, Montgomery; Robert Parker, Montgomery; J. M. Barnes, Montgomery.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Abrams, Maurice J., mc Johns Hopkins 30, recip. Md. 33, 201 Montgomery St., Montgomery.
Anderson, Benjamin F., mc Ala. 08, sb 09, Sellers.
Barnes, J. MacIlwaine, mc Emory 28, sb 28, Bell Bldg., Montgomery.
Bartlett, Haywood S., mc Emory 29, sb 29, 36 Clayton St., Montgomery.
Bazar, Philip S., mc McGill 36, sb 39, 1st Nat. Bk. Bldg., Montgomery.
Benkwith, Karl B., mc Univ. Rochester 34, recip. Minn. 40, 36 Clayton St., Montgomery.
Bennett, Willard D., mc Vanderbilt 40, recip. Tenn. 45, Louisville Gen. Hosp., Louisville, Ky.
Bickerstaff, James Warren, mc Emory 27, sb 28, First National Bank Bldg., Montgomery.
Bird, Buford Cosby, mc Emory 12, recip. Ga. 19, 221 S. Court St., Montgomery.
Blue, John Howard, mc P. & S. N. Y. 01, sb 01, 201 Montgomery St., Montgomery.
Bograd, Nathan, mc St. Andrews (Scot.) 35, sb 36, 219 Church St., Montgomery.
Boozer, Thomas S., mc Washington Univ. 37, sb 37, 32 Clayton St., Montgomery.
Bowman, James Luther, mc Univ. Va. 97, cb Bullock 01, City Hall, Montgomery.
Branch, Jno. L., mc Harvard 26, Nat. Ex. Bd. 29, 201 Montgomery St., Montgomery.
Brannon, William T., mc Rush 40, sb 41, 818 Mulberry St., Montgomery.
Britton, William R., mc Emory 29, recip. Ga. 35, 4 Catoma St., Montgomery.
Broach, Norman Leslie, mc Emory 09, sb 03, Pine Level.
Buchanan, John P., mc Ala. 92, cb Butler 92, 3 S. Court St., Montgomery.
Buresch-Henke, Hildegard, mc Univ. Breslau 34, sb 37, 462 S. Court St., Montgomery.
Burke, Rush Pearson, mc P. & S. N. Y. 08, sb 10, 201 Montgomery St., Montgomery.
Burns, Ellis P., mc Tenn. 17, recip. Miss. 29, Veterans Hospital, Montgomery.
Burwell, Philip K., mc Tulane 40, recip. La. 41, Moore Bldg., Montgomery.
Cannon, Douglas Launeese, mc Jefferson 19, sb 20, 519 Dexter Ave., Montgomery.
Chapman, Frank E., mc LSU 37, recip. La. 44, 708 Cloverdale Road, Montgomery.
Climo, Henry J. mc Ohio State 37, recip. Ohio 39, Box 3145, Durham, N. C.
Cobbs, Beverly Woodfin, mc Tulane 19, sb 19, 28 Sayre St., Montgomery.
Cohen, Nace R., mc Emory 37, recip. Ga. 40, 108 Moore Bldg., Montgomery.
Collins, Henry C., mc Emory 34, recip. Ga. 37, 25 Wilkinson St., Montgomery.
Cowles, A. D., mc Ala. 11, sb 11, Ramer.
Daniel, William A., Jr., mc Northwestern 39, NBE 41, 115 S. Union St., Montgomery.
Davis, John Walter, Jr., mc Univ. Va. 32, recip. Va. 37, 401 S. Court St., Montgomery.
Dawson, Harris Pickens, mc Tulane 10, sb 09, 17 Adams Ave., Montgomery.
Day, Jane Matthews, mc Washington Univ. 41, sb 42, 201 Montgomery St., Montgomery.
Day, Robert C., mc Tulane 37, recip. La. 46, Bell Building, Montgomery.
Dillon, John F., 3rd., mc Washington Univ. 36, recip. Mo. 39, 201 Montgomery St., Montgomery.

- Farrior, James Harvey, mc Rush 30, recip. Ind. 34, 201 Montgomery St., Montgomery.
- Gayden, Lewis R., mc Vanderbilt 25, recip. Tenn. 46, 201 Montgomery St., Montgomery.
- Gill, Daniel Gordon, mc Univ. Toronto 22, sb 26, 519 Dexter Ave., Montgomery.
- Glazer, Harry, mc Tulane 31, recip. La. 34, 818 Bell Bldg. Montgomery.
- Graham, Arthur H., mc Toronto 22, sb 26, City Hall, Montgomery.
- Gunter, Wm. A. 3rd., mc Johns Hopkins 26, recip. N. Y. 30, 203 S. Court St., Montgomery.
- Hagood, Daniel Salley, mc Tulane 25, recip. La. 26, First Nat. Bk. Bldg., Montgomery.
- Haigler, James Robert, mc Ala. 97, sb 97, 315 Narrow Lane Rd., Montgomery.
- Hicks, James B., mc Johns Hopkins 24, recip. Md. 41, 201 Montgomery St., Montgomery.
- Hill, James Fitts, mc P. & S. N. Y. 11, recip. Wash. 23, 305 Church St., Montgomery.
- Hill, Luther L., Jr., mc Tulane 29, recip. La. 30, 24 S. Perry St., Montgomery.
- Hill, Robert Somerville, mc Univ. N. Y. 91, cb 91, 310 Montgomery St., Montgomery.
- Holding, Bruce Fowler, mc Va. 17, pro forma USN 21, 201 Montgomery St., Montgomery.
- Hough, James Spencer, mc Georgetown 93, recip. D. C. 23, 519 Dexter Ave., Montgomery.
- Hubbard, Thomas Brannon, mc P. & S. N. Y. 10, sb 12, 515 Forest Ave., Montgomery.
- Jabour, Ernest P., mc Univ. Tenn. 42, recip. Tenn. 47, 32 Clayton St., Montgomery.
- Jackson, Benjamin Franklin, mc Vanderbilt 08, sb 07, 201 Montgomery St., Montgomery.
- Jackson, B. Franklin, Jr., mc New York Univ. 36, recip. N. Y. 39, 521 Forest Ave., Montgomery.
- Johnson, Claud, mc Vanderbilt 32, recip. Tenn. 38, 201 Montgomery St., Montgomery.
- Johnson, Harald N., mc Univ. Neb. 33, NBE 42, 49 W. 49th St., New York.
- Jones, John Allen, Jr., mc Emory 38, sb 38, 401 S. Court St., Montgomery.
- Kaiser, Elias Noah, mc Long Island 32, recip. N. Y. 40, 601 S. Hull St., Montgomery.
- Kirkpatrick, Milton Barnes, mc Tulane 96, cb Crenshaw 96, 201 Montgomery St., Montgomery.
- Kocour, Elmer J., mc Univ. Ill. 33, recip. Ill. 45, 201 Montgomery St., Montgomery.
- Lafferty, Charles R., mc LSU 34, recip. La. 40, 120 S. Perry Street, Montgomery.
- Laslie, Carney G., mc Baltimore 03, cb Macon 03, 203 Catoma St., Montgomery.
- Laslie, J. Cobb, mc Johns Hopkins 33, recip. Md. 45, 203 Catoma St., Montgomery.
- Leach, Charles Nelson, mc Leland Stanford 14, recip. Cal. 25, 49 West 49th St., New York.
- Long, Daniel J., mc Ala. 16, sb 17, 515 Forest Ave., Montgomery.
- Long, Irl Richard, mc Wash. Univ. 36, recip. Mo. 38, Professional Center Bldg., Montgomery.
- Lumpkin, Hoyt G., mc Emory 45, recip. Ga. 46, Veterans Hosp., Montgomery.
- Marrs, Theodore Clarke, mc Univ. Tenn. 40, recip. Tenn. 44, 17 Adams Avenue, Montgomery.
- Martin, Farris J., mc Tulane 29, recip. Miss. 31, 10½ Court Sq., Montgomery.
- Martin, John A., mc Vanderbilt 24, sb 24, 403 S. Court St., Montgomery.
- May, William P., mc George Washington Univ. 35, recip. Md. 46, 120 S. Perry St., Montgomery.
- McConnico, Frank Hawthorne, mc Tulane 99, cb Wilcox 99, 201 Montgomery St., Montgomery.
- Meadows, Henry Howard, Jr., mc Washington Univ. 36, recip. Mo. 38, 201 Montgomery St., Montgomery.
- Mertins, Paul S., Jr., mc Columbia Univ. P. & S. 33, Nat. Ex. Bd. 35, Bartlett Bldg., Montgomery.
- Millett, George W., mc Stanford Univ. 17, recip. Oregon 46, Veterans Hosp., Montgomery.
- Milligan, Rufus Lee, mc Univ. Nashville 03, cb Cullman 03, 201 Montgomery St., Montgomery.
- Monsky, David B., mc Tulane 33, sb 33, Bell Bldg., Montgomery.
- Mount, Bernard, mc Tulane 00, sb 06, 403 E. Fairview Ave., Montgomery.
- Newdorp, John, mc Rush 36, recip. Ill. 41, 105 Mt. Vernon Dr., Montgomery.
- Nickson, Hugh Clare, mc Univ. Louisville 32, recip. Mo. 35, 14 S. Decatur St., Montgomery.
- Nodine, Edwin R., mc Tulane 25, recip. N. Y. 37, 201 Montgomery St., Montgomery.
- Parker, Chas. E. R., mc Vanderbilt 27, recip. Tenn. 29, 204 College Street, Montgomery.
- Penton, John Randolph, mc Emory 14, sb 15, 201 Montgomery St., Montgomery.
- Penton, J. Randolph, Jr., mc S. C. 44, recip. S. C. 45, 201 Montgomery St., Montgomery.
- Perry, Joseph W., mc Tulane 40, sb 41, 17 Adams Ave., Montgomery.
- Peters, George S., mc Temple Univ. 33, recip. Ohio 46, Veterans Hospital, Montgomery.
- Pye, Alice Hill, mc N. Y. University 40, sb 40, 305 Church St., Montgomery.
- Rapp, Edwin W., mc Rush 18, recip. Ill. 46, Veterans Hosp., Montgomery.
- Reynolds, Fred Dawson, mc Johns Hopkins 16, recip. Pa. 19, 203 Catoma St., Montgomery.
- Riggs, Frank Willard, mc Univ. Va. 25, sb 25, 401 S. Court St., Montgomery.
- Rosen, Herman L., mc Vanderbilt 34, recip. Tenn. 36, 310 Montgomery St., Montgomery.
- Sawyer, Harold Paine, mc Johns Hopkins 06, recip. N. Y. 45, 519 Dexter Ave., Montgomery.
- Selikoff, Solomon J., mc N. Y. Univ. 36, recip. N. Y. 46, Bell Building, Montgomery.
- Shelton, Samuel Wayne, mc Univ. Ark. 28, recip. Ark. 29, Kilby, Montgomery.
- Smith, J. Sam, mc Univ. Louisville 36, recip. Ky. 40, 4 Catoma St., Montgomery.
- Smith, Walton H. Y., mc McGill 23, recip. Iowa 34, 519 Dexter Ave., Montgomery.
- Smith, William Lamar, mc Tulane 43, sb 44, 1st Nat. Bk. Bldg., Montgomery.
- Stevenson, Forney Caldwell, mc P. & S. N. Y. 93, cb Calhoun 93, 531 S. Perry St., Montgomery.
- Stickley, Courtney S., mc Va. 33, recip. Va. 35, 201 Montgomery St., Montgomery.
- Stokes, Ewel M., mc Atlanta P. & S. 14, sb 14, 12 Court Sq., Montgomery.
- Stough, William Vesta, mc Ala. 07, cb 07, 201 Montgomery St., Montgomery.
- Suggs, Samuel D., mc Ala. 05, cb 05, 310 Montgomery St., Montgomery.
- Tankersley, William, mc Ky. 06, cb Crenshaw 06, Hope Hull.
- Thigpen, Charles Alston, mc Tulane 88, cb Butler 88, 401 S. Court St., Montgomery.
- Thigpen, Francis M., mc Tulane 34, recip. Minn. 40, 201 Montgomery St., Montgomery.
- Thomas, Archie E., mc Vanderbilt 24, sb 24, 17 Adams Ave., Montgomery.
- Thorington, Thomas Chilton, mc Tulane 94, cb 94, 10½ Court Square, Montgomery.
- Trumper, Abraham, mc Jefferson 11, sb 12, 201 Montgomery St., Montgomery.
- Van Wezel, Norman, mc Western Reserve 35, recip. Ohio 39, 17 Adams Avenue, Montgomery.
- Virgin, William B., mc Tulane 42, recip. La. 46, Bartlett Bldg., Montgomery.
- Waters, Hinton W., Jr., mc Tulane 42, sb 43, 201 Montgomery St., Montgomery.
- Watkins, J. Harold, mc Tulane 27, sb 27, 401 S. Court St., Montgomery.

Weil, Clarence K., mc Columbia Univ. 23, sb 27, 1001 S. Hull St., Montgomery.
Weinrib, Joseph, mc Long Is., 34, recip. N. Y. 46, Veterans Hospital, Montgomery.
Westcott, William B., mc P. & S. N. Y. 02, sb 02, 203 Cato-ma St., Montgomery.
Wilkerson, William Washington, mc Tulane 19, sb 19, 201 Montgomery St., Montgomery.
Wilkinson, Henry B., mc Univ. Va. 94, cb Tuscaloosa 96, Bishopville, S. C.
Willis, Chas. Alfred, mc Tulane 40, recip. La. 42, 119 Adams Ave., Montgomery.
Wilson, Robert Kemp, mc Univ. Ga. 28, NBE 37, 515 For-est Ave., Montgomery.
Wishik, Julian L., mc Long Is. 37, recip. N. Y. 45, 36 Clay-ton St., Montgomery.
Total 119

PHYSICIANS NOT MEMBERS

Adair, R. T. (col.), mc Amer. Missionary 10, sb 11, 208½ Monroe St., Montgomery.
Black, J. Henry, mc Ala. 05, sb 05, 12½ Dexter Ave., Montgomery.
Boyd, Lynn Matthews, mc Ala. 01, cb Macon 01, 208 S. Capitol Parkway, Montgomery.
Garrett, James DeWitt, mc Tulane 12, sb 12, Veterans Hospital, Montgomery.
Hudson, Percy D., mc Emory 30, recip. Ga. 31, Veterans Hosp., Montgomery
Long, Thos. F., mc Tulane 08, recip. La. 23, Veterans' Fa-cility, Montgomery.
McLean, Jas. Neal, mc Tulane 98, cb Lowndes 99, Snow-doun.
Pettus, William Dean (col.), mc Meharry 34, recip. Tenn. 35, 292½ W. Jeff Davis Ave., Montgomery.
Ross, Freeland Floyd (col.), mc Howard 27, sb 27, 36½ N. Lawrence St., Montgomery.
Stanley, William Alfred, mc Ala. 12, cb Coffee 12, Veter-ans Hospital, Montgomery.
Tisdale, Raphael E. (col.), mc Meharry 43, recip. Tenn. 45, Montgomery.
Washington, William (col.), mc Meharry 06, cb Lowndes 06, 283 S. Jackson St., Montgomery.
Wilborn, Don (col.), mc Leonard 09, sb 10, 123½ Monroe St., Montgomery.
Wynn, Andrew Lee, mc Md. 89, cb Covington 03, Mt. Meigs Rd., Montgomery.
Total 14

(52) MORGAN COUNTY

Mobile 1876

President—W. H. Block Hartselle
Vice-President—William Grosfeld Decatur
Secretary-Treasurer—L. R. Murphree Decatur
County Health Officer—L. R. Murphree Decatur
Censors—F. L. Chenault, Chairman, Decatur; W. H. Lovelady, Hartselle; G. H. Nungester, Decatur; J. C. Bragg, Decatur; J. W. Hughes, Decatur.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Anderson, Walton H., mc Vanderbilt 18, recip. Tenn. 19, Decatur.
Barrett, Maurice E., mc Univ. Texas 31, recip. Texas 45, Decatur.
Block, William Henry, mc Tenn. 36, recip. Tenn. 37, Hart-selle.
Bragg, Jno. C., mc Ala. 17, sb 17, Decatur.
Brindley, Thaddeus B., mc Georgia Eclectic 91, cb 00, Hartselle.
Burch, John T., mc Ala. 06, cb Lawrence 06, Hartselle.
Burleson, Robert J., mc Univ. Louisville 43, recip. Ky. 46, Decatur.
Chenault, Erskine M., mc Vanderbilt 25, recip. Tenn. 26, Decatur.
Chenault, Frank L., mc Ala. 04, cb Lawrence 04, Decatur.

Chenault, John Murphy, mc Vanderbilt 42, NBE 44, De-catur.
Cleere, Ruel C., mc Ala. 09, sb 09, Danville.
Craig, William J., mc Tulane 25, recip. La. 37, Decatur.
Dinsmore, A. J., mc Chicago P. & S. 16, recip. Ill. 20, De-catur.
Greer, Hugh Dixon, mc Ala. 10, sb 10, Decatur.
Grosfeld, William J., mc Long Is. 21, sb N. Y. 36, Decatur.
Guyton, Thomas M., mc Vanderbilt 35, recip. Tenn. 38, Decatur.
Hamil, James Young, mc Ala. 16, sb 16, Decatur.
Howle, Jas. Augustus, mc Ala. 90, cb Elmore 90, Hartselle.
Hughes, J. W., mc Loyola 16, sb 17, Decatur.
Lavender, Claude Wilson, mc Northwestern 41, sb 42, Hartselle.
Lovelady, William H., mc Ala. 97, cb 97, Hartselle.
Murphree, Lee Roy, mc Vanderbilt 23, sb 23, Decatur.
Nungester, Garrold H., mc Tulane 33, sb 33, Decatur.
Pitt, Charles K., mc Tulane 39, recip. La. 41, Children's Hosp., Dallas, Texas.
Roan, Avery M., mc Chicago M. & S. 14, sb 14, Decatur.
Smith, Merle E., mc Nebraska 29, sb 30, APO 343, San Francisco. (S.)
White, Arthur Marion, mc Ala. 09, sb 10, Hartselle.
Total 27

PHYSICIANS NOT MEMBERS

Baugh, Wendell Phillip, mc Louisville 11, recip. Tenn. 23, Decatur.
Booth, William M., mc Vanderbilt 02, cb Jackson 02, Hart-selle.
Vinson, Noley H., mc Tulane 35, sb 36, Falkville.
Wiley, James B., mc Tenn. 32, recip. Tenn. 34, Decatur.
Total 4

(53) PERRY COUNTY

Montgomery 1875

President—A. F. Wilkerson Marion
Vice-President—T. J. Jones Marion
Secretary-Treasurer—J. R. Long Marion
County Health Officer—J. R. Long Marion

Censors—S. A. Gordon, Chairman, Marion; M. H. Eskew, Uniontown; J. V. Howell, Marion; C. B. Robinson, Marion; A. F. Wilkerson, Marion.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Dawson, James R., mc Vanderbilt 03, cb Jefferson 03, Uniontown.
Eskew, M. H., mc Univ. Va. 17, sb 17, Uniontown.
Gordon, Samuel A., mc Ala. 95, cb Lowndes 95, Marion.
Howell, John V., mc Tulane 21, sb 21, Marion.
Jones, Thomas J., mc Ala. 15, sb 18, Marion.
Long, John Reed, mc Tenn. 25, sb 25, Marion.
Robinson, Cornelius B., mc Louisville 92, cb Lowndes 92, Marion.
Wilkerson, Arthur F., mc Univ. Pa. 34, sb 36, Marion.
Total 8

PHYSICIANS NOT MEMBERS

None.

(54) PICKENS COUNTY

Eufaula 1878

President—C. M. Murphy Aliceville
Vice-President—S. R. Parker Aliceville
Secretary-Treasurer—V. L. Ashcraft Reform
County Health Officer—J. H. Ashcraft* Carrollton

Censors—H. W. Hill, Chairman, Carrollton; V. L. Ash-craft, Reform; A. T. Kirk, Gordo, Rt. 2; C. M. Murphy, Aliceville; L. C. Davis, Gordo.

*See also Fayette County.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Ashcraft, Virgil Lee, mc Ala. 12, sb 12, Reform.
 Davis, John Lewis, mc Vanderbilt 91, cb Tuscaloosa 91,
 341 Second St. N., Apt. 6, St. Petersburg, Fla.
 Davis, Lewis Clifton, mc Emory 15, sb 15, Gordo.
 Duncan, Wm. W., mc Ala. 00, cb Fayette 00, Aliceville.
 Hill, Hugh Wilson, mc Ala. 04, cb 04, Carrollton.
 Hill, William E., mc Univ. Louisville 43, recip. Ky. 46,
 Carrollton. (S.)
 Kirk, Albert Thomas, mc Memphis Hosp. 02, cb 02, Gordo,
 Rt. 2.
 Murphy, C. M., mc Ala. 98, cb Greene 98, Aliceville.
 Parker, Sheffie Rufus, mc Ala. 09, sb 09, Aliceville.
 Spruill, George Edward, mc Memphis Hosp. 01, cb 02,
 Ethelsville.
 Wimberly, Gilbert B., mc Ala. 92, cb Lamar 92, Reform.
 Total 11

PHYSICIANS NOT MEMBERS

Snoddy, Ephriam Alex, mc Ala. 97, cb Lamar 97, Alice-
 ville.
 Total 1

(55) PIKE COUNTY

Eufaula 1878

President—C. K. Beck Troy
 Vice-President—J. O. Colley, Jr. Troy
 Secretary—H. M. Sacks Troy
 Treasurer—W. P. Stewart Troy
 County Health Officer—W. H. Abernethy Troy

Censors—T. D. Cowles, Chairman, Troy; W. P. Stewart,
 Troy; W. B. Sanders, Troy; R. B. Beard, Troy; H. M.
 Sacks, Troy.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Abernethy, Wm. Henry, mc Ala. 09, sb 09, Troy.
 Beard, Robert Briggs, mc Tulane 13, sb 13, Troy.
 Beck, Chester Keith, mc Tenn. 34, recip. Tenn. 36, Troy.
 Brantley, James A., mc Tulane 40, sb 41, Troy.
 Colley, James O., Jr., mc Tulane 34, recip. La. 35, Troy.
 Cowles, Thomas DeWitt, mc Ala. 18, sb 18, Troy.
 Edge, Oscar Nelson, mc P. & S. Atlanta 10, sb 10, Troy.
 Johnston, Francis Thomas, mc Ala. 20, sb 20, Brundidge.
 Johnston, John David, mc P. & S. Atlanta 00, sb 01, Brun-
 didge.
 Killingsworth, Noah W., mc Tulane 25, sb 25, Brundidge.
 Reynolds, Grover C., mc Tulane 11, sb 11, Brundidge.
 Sacks, Herman M., mc Louisville 35, recip. Ky. 37, Troy.
 Sanders, William Bryan, mc Atlanta Sou. 85, cb 85, Troy.
 Stewart, William P., mc Tulane 32, recip. La. 35, Troy.
 Total 14

PHYSICIANS NOT MEMBERS

Innis, Samuel B. (col.), mc Meharry 05, sb 05, Troy.
 Total 1

(56) RANDOLPH COUNTY

Eufaula 1878

President—C. E. Ford Roanoke
 Vice-President—J. R. Manley Roanoke
 Secretary-Treasurer—W. W. Stevenson Roanoke
 County Health Officer—J. R. Manley (Act.) Roanoke

Censors—J. R. Manley, Chairman, Roanoke; R. C. Lov-
 vorn, Newell; J. T. Clack, Wadley; G. C. Ussery, Roan-
 oke; A. J. Gay, Roanoke.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Bonner, Gerson W., mc Emory 31, sb 31, Roanoke.
 Clack, J. Thos., mc Ala. 11, sb 11, Wadley.
 Ford, Charles Edward, mc Atlanta 14, sb 14, Roanoke.
 Gay, Andrew Jackson, mc Chicago M. & S. 13, sb 14,
 Roanoke.
 Lovvorn, Robert C., mc Atlanta 12, sb 12, Newell.
 Manley, John Radney, mc Memphis Hosp. 13, sb 20,
 Roanoke.
 Mastin, Orville Charles, mc Detroit 86, sb 08, Wedowee.
 Stevenson, William Worth, mc Ala. 03, cb 03, Roanoke.
 Ussery, Gordon Clopton, mc Emory 19, recip. Ga. 22,
 Roanoke.

Total 9

PHYSICIANS NOT MEMBERS

Denny, Thomas H., mc Atlanta 15, sb 15, Wadley. (Li-
 cense revoked March 6, 1945.)
 Swann, Joseph Charles, mc Ala. 90, cb 92, Wedowee.
 Total 2

(57) RUSSELL COUNTY

Tuscaloosa 1887

President—R. C. Prather Phoenix City
 Secretary-Treasurer—R. B. McCann Seale
 County Health Officer—R. W. Todd Phoenix City

Censors—R. C. Prather, Chairman, Phoenix City; R.
 B. McCann, Seale; S. J. Floyd, Phoenix City.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Floyd, Seth J., mc Tulane 25, recip. La. 26, Phoenix City.
 Knowles, Clyde M., Jr., mc Hahnemann 45, recip. Del. 47,
 Phoenix City.
 Luton, Norman S., mc Univ. Ark. 43, recip. Ark. 46, Phoe-
 nix City.
 McCann, Richard Bennett, mc Atlanta 11, sb 11, Seale.
 Prather, Robert Clark, mc Ala. 98, cb 98, Phoenix City.
 Total 5

PHYSICIANS NOT MEMBERS

Allen, Arthur Redding, mc Atlanta 97, cb 98, Fort Mitch-
 ell, RFD.
 Brooks, Roland L., mc Atlanta 16, recip. Ga. 30, Phoenix
 City, Rt. 2.
 Floyd, Ashby, mc Tulane 89, cb Lee 95, Phoenix City.
 Todd, Robert W., mc Atlanta P. & S. 12, sb Ga. 12, Phoe-
 nix City.
 Total 4

(58) SHELBY COUNTY

Birmingham 1877

President—L. C. Parnell Montevallo
 Vice-President—W. C. Browne Vincent
 Secretary-Treasurer—Willena Peck Montevallo
 County Health Officer—E. F. Sloan Columbiana

Censors—E. F. Sloan, Chairman, Columbiana; C. T.
 Acker, Montevallo; J. A. Hines, Siluria; J. H. Crawford,
 Columbiana; Terrell Bridges, Montevallo.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Acker, Charles Thomas, mc Ala. 00, cb 00, Montevallo.
 Barnes, Everett Beck, mc Jefferson 42, sb 43, Boothton.
 Bridges, Terrell, mc Ala. 15, sb 23, Montevallo.
 Browne, Jean Clark, mc Univ. Neb. 42, recip. Neb. 46,
 Vincent.
 Browne, William C., mc Univ. Mich. 41, recip. Mich. 46,
 Vincent.
 Crawford, James H., mc Tulane 22, sb 22, Columbiana.
 Embry, Jerre Carl, mc Atlanta 89, cb St. Clair 89, Vincent.
 Gould, Kenneth N., mc Louisville 31, recip. Ky. 36, Wil-
 sonville.

Hines, John Allen, mc Tulane 21, sb 21, Siluria.
Hubbard, Leslie H., mc Washington Univ. 37, sb 37, Montevallo.
Parnell, Leighton C., mc Tenn. 28, recip. Tenn. 29, Montevallo.
Peck, Willena, mc Woman's of Baltimore 00, sb 15, Montevallo.
Ryan, J. M., mc Ala. 15, sb 17, Helena.
Shafferman, Samuel L., mc Emory 43, recip. Ga. 46, Columbiana.
Sloan, Elihu Frank, mc Emory 16, sb 16, Columbiana.
Total 15

PHYSICIANS NOT MEMBERS

None.

(59) ST. CLAIR COUNTY

Eufaula 1878

President—J. T. Roberson Riverside
Secretary-Treasurer—J. A. Watson Springville
County Health Officer..... Ashville

Censors—J. T. Roberson, Chairman, Riverside; H. S. Awtrey, Ashville; R. A. Martin, Pell City; J. A. Watson, Springville; T. L. Rennie, Pell City.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Awtrey, Hobart S., mc Tulane 23, sb 23, Ashville.
Bains, Richard C., mc Ala. 98, cb 07, 1814 Fifth Ave., Bessemer.
Bartel, Robert M., mc Univ. Iowa 43, recip. Iowa 47, Pell City.
Boggan, Jeff. M., mc Tulane 21, sb 22, Ragland.
Connell, Isee Lee, mc Univ. Chicago 29, recip. Ill. 31, Palatka, Fla.
Martin, Robert A., mc Vanderbilt 01, cb 01, Pell City.
Odom, Corley W., mc Tenn. 43, sb 44, Acmar.
Rennie, Thos. L., mc Tulane 19, sb 19, Pell City.
Roberson, John T., mc Ala. 03, cb 03, Riverside.
Watson, James Alex., mc Ala. 03, cb Jefferson 03, Springville.
Total 10

PHYSICIANS NOT MEMBERS

Porter, Mae E., mc Tenn. 45, recip. Tenn. 46, Pell City.
Total 1

(60) SUMTER COUNTY

Mobile 1876

President—R. E. Hale Bellamy
Vice-President—L. F. Jackson Panola
Secretary-Treasurer—S. J. Williams Livingston
County Health Officer—S. J. Williams Livingston

Censors—W. J. McCain, Chairman, Livingston; J. C. McDaniel, York; R. E. Hale, Bellamy; J. P. Scales, Livingston; R. D. Spratt, Livingston.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Byrne, David C., Jr., mc Ala. 09, sb 09, Bellamy.
Hale, Robert Eugene, mc Chattanooga 04, cb Cullman 04, Bellamy.
Harwood, Robert Ellyson, mc Ala. 00, cb 00, Gainesville.
Hester, Forest Lee, mc Tenn. 06, cb 06, Coatopa, RFD.
Hill, Robert Carl, mc Tulane 25, recip. La. 26, York.
Hunt, Horace C., mc Univ. Tenn. 32, recip. Tenn. 37, Livingston.
Jackson, C. A., mc Ala. 08, sb 08, York.
Jackson, Leonidas F., mc Ala. 01, cb Fayette 01, Panola.

McCain, William Jasper, mc Ala. 91, cb Mobile 91, Livingston.
McDaniel, Joseph Columbus, mc Ala. 04, cb 04, York.
Minus, J. A., mc Ala. 08, sb 08, Epes.
Scales, John Perkins, mc Louisville 97, cb 97, Livingston.
Spratt, Robert D., mc Tulane 02, cb 02, Livingston.
Williams, Sidney J., mc Vanderbilt 33, sb 34, Livingston.
Wrenn, W. J., mc Ala. 08, sb 08, Sumterville.
Total 15

PHYSICIANS NOT MEMBERS

Gibbs, Jesse Augustus, mc Ala. 07, cb 07, Gainesville.
Jones, Joseph Francis, mc Atlanta 01, cb 01, Cuba.
Total 2

(61) TALLADEGA COUNTY

Anniston 1886

President—S. D. Davis Talladega
Vice-President—G. W. Colvin Lincoln
Secretary—J. L. Hardwick Talladega
Treasurer—D. P. Dixon Talladega
County Health Officer—D. P. Dixon (Act.) Talladega

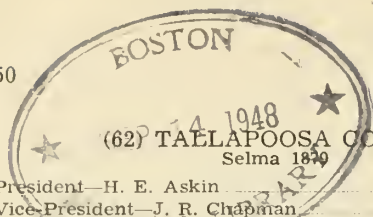
Censors—Paul Nickerson, Chairman, Sylacauga; D. P. Dixon, Talladega; A. F. Toole, Talladega; S. D. Davis, Talladega; R. P. Stock, Childersburg.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Cole, Leslie G., mc Tenn. 31, recip. Tenn. 32, Talladega.
Colvin, Gus Wilson, mc Tulane 27, recip. La. 28, Lincoln.
Craddock, French H., mc Tulane 12, sb 14, Sylacauga.
Craddock, French H., Jr., mc Tulane 39, recip. La. 40, Sylacauga.
Davis, Sumner D., mc Univ. Pa. 33, sb 36, Talladega.
Dixon, Duncan Patterson, mc Tulane 01, cb 01, Talladega.
Evans, Kenneth P., mc Rush 29, sb 30, Sylacauga.
Friday, William C., mc Rush 42, sb 47, Sylacauga.
Hardwick, James L., mc Tulane 43, sb 44, Talladega.
Moore, Carey W. C., mc Ala. 13, sb 14, Talladega.
Nickerson, Paul, mc Tulane 31, sb 31, Sylacauga.
Owings, Thomas L., mc Emory 24, sb 24, Sylacauga.
Pitchford, John D., mc Emory 22, sb 22, Sylacauga.
Pohl, William F., mc Jefferson 23 recip. Pa. 45 Sycamore.
Salter, Clarence L., mc Ala. 11, sb 11, Talladega.
Sherman, Morris, mc LSU 40, recip. La. 41, Sylacauga.
Sims, James Anthony, mc Univ. Nashville 07, cb 07, Employees' Hospital, Fairfield.
Stewart, Roscoe C., mc Ala. 13, sb 14, Sylacauga.
Stock, Robert Paul, mc S. C. 28, sb 28, Childersburg.
St. Peter, M. Alfred, mc West. Penn. 10, recip. Pa. 46, Sylacauga.
Terry, Lucius Lamar, mc Tenn. 16, sb 16, Sylacauga.
Toole, Arthur F., mc Harvard 35, recip. Pa. 39, Talladega.
Warwick, Bishop B., mc Tulane 02, cb 02, Talladega.
Washam, Marvin, mc Tulane 23, sb 23, Talladega.
Whetstone, A. K., mc Ala. 14, sb 14, Sylacauga.
Winslow, Robert C., mc Univ. Kansas 35, recip. Kansas 36, Sylacauga.
Wren, Edward Bates, mc Ala. 90, cb 90, Talladega.
Total 27

PHYSICIANS NOT MEMBERS

Brothers, Warren H. (col.), mc Meharry 08, sb 08, Talladega.
Jeter, Marvin L., mc Emory 25, sb 26, Sylacauga.
Jones, Elisha Henry (col.), mc Univ. West Tenn. 09, sb 09, Talladega.
Jones, Wade Anthony (col.), mc Denver Homeopathic 01, recip. Col. 38, Sylacauga.
Kelly, J. P. (col.), mc Howard 33, sb 34, Talladega.
Total 5

(62) TALLAPOOSA COUNTY
Selma 1879

President—H. E. Askin Alexander City
 Vice-President—J. R. Chapman Alexander City
 Secretary-Treasurer—L. H. Hamner Dadeville
 County Health Officer—L. H. Hamner Dadeville

Censors—R. A. Foshee, Chairman, Alexander City, Rt. 5; J. A. Chapman, Alexander City; J. T. Banks, Dadeville; J. E. Cameron, Alexander City; J. L. Denney, Alexander City.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES

Askin, Henry Ernest, mc Tulane 36, recip. La. 37, Alexander City.
 Banks, Joseph Todd, mc Atlanta P. & S. 13, sb 13, Dadeville.
 Bennett, J. L., mc Univ. Tenn. 31, recip. Tenn. 40, E. Tallassee.
 Cameron, James E., mc Tulane 30, sb 31, Alexander City.
 Chapman, James A., mc Ala. 05, cb 05, Alexander City.
 Chapman, John R., mc Univ. Ark. 41, recip. Ark. 45, Alexander City.
 Dark, Harold U., mc Tulane 41, recip. La. 46, Alexander City.
 Denney, John Lofton, mc Emory 21, sb 21, Alexander City.
 Foshee, Reuben A., mc Ala. 07, cb 07, Alexander City, Rt. 5.
 Hamner, Harper Taliaferro, mc Vanderbilt 89, cb Chambers 90, Camp Hill.
 Hamner, Lewis Herschel, mc Vanderbilt 16 sb 16, Dadeville.
 Hodge, Emory K., mc Atlanta 09, sb 09, Daviston.
 Lamberth, Wade C., mc Wash. Univ. 35, recip. Mo. 36, Alexander City.
 Newman, Lucian, mc Tenn. 31, sb 31, Dadeville.
 Walls, J. J., mc Ala. 16, sb 16, Alexander City.
 Total 15

PHYSICIANS NOT MEMBERS

Schrader, Merlin A., mc Univ. Iowa 40, recip. Iowa 43, E. Tallassee.
 Total 1

(63) TUSCALOOSA COUNTY
Birmingham 1877

President—C. L. Brook Tuscaloosa
 Vice-President—T. H. Patton, Jr. Tuscaloosa
 Secretary-Treasurer—Weldon Ray Tuscaloosa
 County Health Officer—W. J. Donald Tuscaloosa

Censors—Ruby E. L. Tyler, Chairman, Tuscaloosa; S. T. Hardin, Tuscaloosa; O. L. Jordan, Tuscaloosa; J. W. Wilson, Tuscaloosa; J. H. Goode, Tuscaloosa.

NAMES OF MEMBERS WITH THEIR COLLEGES AND POSTOFFICES.

Abbott, Chas. E., Jr., mc Tulane 22, sb 22, Tuscaloosa.
 Anderson, William D., mc George Washington Univ. 28, sb 29, Tuscaloosa.
 Beale, James S., mc Univ. Nashville 06, cb 06, Tuscaloosa.
 Booth, James L., mc Ala. 11, sb 11, Northport.
 Brook, Clarence L., mc Tulane 38, recip. La. 40, Tuscaloosa.
 Christian, James S., mc Ala. 12, sb 12, Tuscaloosa (Alberta City).
 Clements, Ralph M., mc Rush 30, sb 32, Tuscaloosa.
 Cochrane, Robert H., Jr., mc Tulane 29, sb 29, Tuscaloosa.
 Collier, James P., mc Tulane 29, sb 29, Tuscaloosa.
 Conwill, Gratton B., mc Tulane 26, sb 26, Tuscaloosa.
 Darden, Sam H., Jr., mc Tenn. 44, sb 45, Tuscaloosa.
 Davis, Luther, Jr., mc Wash. Univ. 34, sb 36, Tuscaloosa.
 Donald, William J., mc Tenn. 26, sb 28, Tuscaloosa.

Englebert, William F., Jr., mc Univ. Louisville 31, recip. Ind. 46, Tuscaloosa.

Faulk, William Mark, mc Ala. 97, cb Barbour 97, Tuscaloosa.

Fitts, Alston, mc P. & S. N. Y. 95, cb 00, Tuscaloosa.

Goode, J. Henry, mc Tulane 26, sb 26, Tuscaloosa.

Graves, Stuart, mc Syracuse 11, recip. Ky. 28, University.

Guin, James C., Sr., mc Univ. Nashville 09, sb 09, Moores Bridge.

Guin, James C., Jr., mc Long Island 38, sb 40, Tuscaloosa.

Hall, George W., mc Ala. 14, sb 15, Northport.

Hamilton, S. G., mc Ala. 02, cb Elmore 02, Tuscaloosa.

Hardin, Samuel T., mc Ala. 14, sb 14, Tuscaloosa.

Johnson, Chester Earle, Jr., mc Univ. Col. 31, sb 31, Tuscaloosa.

Jordan, Otis Leon, mc LSU 34, recip. La. 35, Tuscaloosa.

Kennedy, Jacob Jenkins, mc Washington Univ. 98, recip. Mo. 30, Tuscaloosa.

Kirk, Arthur A., mc Ala. 97, cb Pickens 97, Tuscaloosa.

Lawrence, Toombs, mc Ala. 12, sb 12, Tuscaloosa.

Leach, Sydney, mc Univ. Va. 96, cb 97, Tuscaloosa.

Majors, W. B., mc Tulane 22, sb 23, Tuscaloosa. (S.)

Mayfield, Peabody B., mc Tenn. 29, sb 30, Tuscaloosa.

Minot, Dobbs, mc Tulane 35, sb 35, Tuscaloosa.

Moody, Maxwell, mc Tulane 13, sb 14, Tuscaloosa.

Oliver, John T., mc Tenn. 26, recip. Tenn. 27, Tuscaloosa.

Partlow, Rufus C., mc Ala. 12, sb 13, Tuscaloosa.

Partlow, William D., mc Ala. 01, cb St. Clair 01, Tuscaloosa.

Patton, Thomas Herbert, Jr., mc Tulane 41, sb 41, Tuscaloosa.

Price, Earl Sanders, mc Emory 16, sb 16, Tuscaloosa.

Ray, Weldon, mc Wash. Univ. 43, recip. Mo. 47, Tuscaloosa.

Reim, Norman H., mc Univ. Tenn. 37, recip. Tenn. 42, Tuscaloosa.

Searcy, Harvey Brown, mc Univ. Mich. 07, cb 07, Tuscaloosa.

Shamblin, James Roscoe, mc Tulane 28, sb 29, Tuscaloosa.

Shamblin, John L., mc Emory 23, sb 23, Tuscaloosa.

Shamblin, R. Dawson, mc LSU 33, recip. La. 36, Tuscaloosa.

Shamblin, W. Grover, mc Ala. 19, sb 19, Tuscaloosa.

Shirley, Joseph Emil, mc Ala. 09, cb 10, Tuscaloosa.

Stevens, Wilkin R., mc Va. 40, recip. Va. 46, Bartley, W. Va.

Tarwater, James S., mc Tenn. 23, sb 23, Tuscaloosa.

Tatum, Albert F., Jr., mc Tulane 44, sb 45, Tuscaloosa.

Tyler, Ruby E. L., mc Tulane 25, recip. Miss. 30, Tuscaloosa.

Walker, Audiss M., mc Ala. 11, sb 11, Tuscaloosa.

Wilson, John W., mc Vanderbilt 03, cb Dallas 03, Tuscaloosa.

Total 52

PHYSICIANS NOT MEMBERS

Donehoo, John H., mc Memphis Hosp. 99, cb Pickens 05, Abertant.

Hausman, Christopher Pfeiffer, mc Ala. 10, sb 10, Coaling.

Mayfield, Surry F., mc Tulane 96, cb 96, Tuscaloosa.

McKenzie, Andrew B. (col.), mc Leonard 12, sb 12, Tuscaloosa.

Smothers, Robt. E. L., mc Ala 97, cb Lamar 03, Northport,
 Total 5

(64) WALKER COUNTY
Mobile 1876

President—T. J. Payne, Jr. Jasper
 Vice-President—W. H. Ivey Jasper
 Secretary-Treasurer—J. L. Sowell Jasper
 County Health Officer—A. M. Waldrop Jasper

Censors—L. M. Walker, Chairman, Jasper; H. J. Sankey, Nauvoo; J. L. Sowell, Jasper; A. C. Jackson, Jasper; J. C. Gladney, Jasper.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Andrew, James, mc Ga. 22, recip. Ga. 25, Cordova.
Baker, Reginald William, mc LSU 35, recip. La. 36, Dora.
Ballard, Asa Elwyn, mc Pulte 02, cb Jefferson 02, Empire.
Camp, Joseph S., mc Tulane 31, recip. La. 33, Jasper.
Donaldson, Bailus E., mc Tenn. 15, sb 26, Carbon Hill.
Gladney, James C., mc Jefferson 24, recip. Pa. 26, Jasper.
Gwin, Paul Eugene, mc Tulane 06, cb Jefferson 06, Sumiton.
Ivey, William Henry, mc Emory 33, recip. Ga. 38, Jasper.
Jackson, A. C., mc Tulane 16, sb 19, Jasper.
Jones, Giles W., mc Grant 01, cb 08, Parrish.
Keith, Gaines W., mc Tenn. 43, recip. Tenn. 46, Carbon Hill.
Lovett, W. J., mc Ala. 09, sb 10, Sipsey.
Maneval, Karl Edgar, mc Univ. Pa. 34, NBE 42, Parrish.
Payne, Thos. J., Jr., mc Tulane 35, recip. La. 36, Jasper.
Sankey, Howard J., mc Ala. 01, cb Choctaw 01, Nauvoo.
Shepherd, Robert H., mc Ala. 10, sb 10, Jasper.
Shores, Sterling S., Jr., mc Ala. 13, sb 14, Carbon Hill.
Simmons, John T., mc Northwestern 38, sb 38, Jasper.
Simpson, John Wesley, mc Memphis 13, sb 22, Parrish.
Snow, William R., mc Chattanooga 08, sb 13, Jasper.
Sowell, James Lawrence, mc Tulane 91, cb Monroe 91, Jasper.
Taggart, John K., Jr., mc Univ. Va. 37, recip. Va. 45, Jasper.
Taylor, Charter Howard, mc Ala. 18, sb 19, Bankhead.
Thetford, J. Dimmick, mc Duke 39, NBE 41, America.
Waldrop, Allen Marion, mc Univ. South 08, sb 09, Jasper.
Walker, L. M., mc Ala. 11, sb 11, Jasper.
Watkins, Homer Stribling, mc Tenn. 37, sb 38, Coal Valley.
Total 27

PHYSICIANS NOT MEMBERS

Blanton, Frank, mc Grant 03, cb 06, Saragossa.
Busby, Elias D., mc Ala. 10, sb 11, Parrish, Rt. 1.
Manasco, Titus, mc Memphis 97, cb 97, Carbon Hill.
Owen, Herndon G., mc Ala. 08, sb 08, Quinton, Rt. 2.
Total 4

(65) WASHINGTON COUNTY
Tuscaloosa 1887

President—W. E. Kimbrough Chatom
Secretary-Treasurer—W. J. Blount Millry
County Health Officer—T. M. Littlepage* Chatom

Censors—W. J. Blount, Chairman, Millry; W. E. Kimbrough, Chatom.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Blount, William James, mc Ala. 10, sb 10, Millry.
Kimbrough, William E., Jr., mc Ala. 15, sb 15, Chatom.
Total 2

PHYSICIANS NOT MEMBERS

None

*See also Choctaw County.

(66) WILCOX COUNTY
Eufaula 1878

President—P. E. Godbold Pine Hill
Vice-President—R. E. Dixon Alberta
Secretary-Treasurer—J. Paul Jones Camden
County Health Officer—E. L. McIntosh Camden

Censors—Walter Fudge, Chairman, Lamison; J. Paul Jones, Camden; J. A. Thompson, Pine Apple; R. E. Dixon, Alberta; E. G. Burson, Furman.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Burson, Ellis G., mc Ala. 06, cb Monroe 06, Furman.
Dixon, Robert Emmett, mc Ala. 17, sb 17, Alberta.
Fudge, Walter, mc Ala. 09, sb 09, Lamison.
Godbold, Percy E., mc P. & S. Atlanta 02, cb Marengo 02, Pine Hill.
Jones, J. Paul, Jr., mc Tulane 19, sb 19, Camden.
Mayer, Kossuth A., mc Memphis Hosp. 00, cb 00, Lower Peach Tree.
McIntosh, E. L., mc Atlanta 02, cb 02, Camden.
Moore, Will W., mc Vanderbilt 96, cb 96, Camden.
Speer, Ross C., mc Univ. Louisville 08, sb 08, Box 940, Jackson, Miss.
Thompson, John A., mc Ark. 31, sb 32, Pine Apple.
Total 10

PHYSICIANS NOT MEMBERS

McClurkin, William N., mc Ala. 17, sb 18, McWilliams, Rt.
Total 1

(67) WINSTON COUNTY
Montgomery 1888

President—Hobson Manasco Haleyville
Vice-President—T. M. Blake Double Springs
Secretary-Treasurer—R. Lee Hill Haleyville
County Health Officer—T. M. Blake (Act.). Double Spgs.

Censors—W. M. Godsey, Chairman, Haleyville; R. F. Blake, Haleyville; R. Lee Hill, Haleyville; W. E. Howell, Haleyville; C. A. Olivet, Haleyville.

NAMES OF MEMBERS WITH THEIR COLLEGES AND
POSTOFFICES

Blake, Robert F., mc Tenn. 38, recip. Tenn. 40, Haleyville.
Blake, Thomas M., mc Tenn. 42, recip. Tenn. 43, Double Springs.
Godsey, Wash M., mc Tenn. 29, sb 30, Haleyville.
Hill, Robert Lee, mc Ala. 09, sb 09, Haleyville.
Howell, William Edward, mc Ala. 00, cb 00, Haleyville.
Manasco, Hobson, mc Vanderbilt 39, recip. Tenn. 40, Haleyville.
Mitchell, John Ira, mc Ala. 12, sb 13, Haleyville.
Olivet, Charles Alonzo, mc Univ. Nashville 06, cb 06, Haleyville.
Wilson, William Kindred, mc Wash. Univ. 35, recip. Mo. 42, Haleyville.
Total 9

PHYSICIANS NOT MEMBERS

None.

INDEX OF MEMBERS 1947

(S.) indicates that the physician is in the service of his country

Name	Town and County	Name	Town and County
Abbott, C. E., Jr.	Tuscaloosa—Tuscaloosa	Baumhauer, J. H.	Mobile—Mobile
Abercrombie, H. S.	Petrey—Crenshaw	Bayles, Lewis E.	Anderson—Lauderdale
Abernathy, T. P.	Moundville—Hale	Bayles, Louie E.	Florence—Lauderdale
Abernethy, W. H.	Troy—Pike	Bayne, R. D.	Selma—Dallas
Abernethy, W. L.	Flomaton—Escambia	Bazar, P. S.	Montgomery—Montgomery
Abrams, M. J.	Montgomery—Montgomery	Bealle, J. S.	Tuscaloosa—Tuscaloosa
Acker, C. T.	Montevallo—Shelby	Beard, R. B.	Troy—Pike
Acker, P. J. M.	Mobile—Mobile	Beasley, J. W.	Geneva—Geneva
Adams, G. W.	Huntsville—Madison	Beatty, T. D.	Cullman—Cullman
Adams, J. B.	Eufaula—Barbour	Beck, C. K.	Troy—Pike
Adams, M. S.	Anniston—Calhoun	Beck, J. E.	Mobile—Mobile
Adams, M. Vaun	Mobile—Mobile	Beckert, C. F.	Gadsden—Etowah
Adkins, Hezekiah	Gadsden—Etowah	Becton, J. A.	Birmingham—Jefferson
Akin, J. M.	Birmingham—Jefferson	Beddow, W. H.	Birmingham—Jefferson
Alexander, W. W.	Florence—Lauderdale	Bedsole, J. G.	Jackson—Clarke
Alford, O. T.	Birmingham—Jefferson	Bell, J. M.	Mobile—Mobile
Alison, J. F.	Selma—Dallas	Belue, J. O.	Athens—Limestone
Alison, S. B.	Minter—Dallas	Benkwith, K. B.	Montgomery—Montgomery
Allen, R. H.	Silas—Choctaw	Bennett, C. R.	Eufaula—Barbour
Allen, W. E.	Sweet Water—Marengo	Bennett, J. L.	E. Tallassee—Tallapoosa
Allgood, H. W.	Fairfield—Jefferson	Bennett, T. L., Jr.	Florence—Lauderdale
Amendola, A. A.	Mobile—Mobile	Bennett, W. D.	Louisville, Ky.—See Montgomery
Anderson, B. F.	Sellers—Montgomery	Benson, R. C. (S.)	Birmingham—Jefferson
Anderson, H. L.	Huntsville—See Fayette	Berrey, I. C.	Birmingham—Jefferson
Anderson, M. N.	Birmingham—Jefferson	Berrey, R. R.	Birmingham—Jefferson
Anderson, T. J.	Greensboro—Hale	Berry, R. A.	Birmingham—Jefferson
Anderson, William	Glencoe, Rt. 2—Etowah	Berry, W. T.	Birmingham—Jefferson
Anderson, W. D.	Tuscaloosa—Tuscaloosa	Best, R. L.	Ensley—Jefferson
Anderson, W. H.	Decatur—Morgan	Bibb, R. C.	Huntsville—Madison
Anderson, W. O.	Gadsden—Etowah	Bickerstaff, J. W.	Montgomery—Montgomery
Andress, D. G.	Madrid—Houston	Bird, B. C.	Montgomery—Montgomery
Andrew, James	Cordova—Walker	Bishop, Brooks	Margaret—See Jefferson
Andrews, N. L.	Birmingham—Jefferson	Bixley, T. J.	Guntersville—Marshall
Anthony, J. C.	Birmingham—Jefferson	Black, J. W.	Ensley, Birmingham—Jefferson
Applebaum, S. L.	Birmingham—Jefferson	Blackburn, C. H.	Selma—Dallas
Argo, Eugene	Goodwater—Coosa	Blackshear, G. W.	Opelika—Lee
Argo, J. R.	Tarrant—Jefferson	Blair, E. S.	Gadsden—Etowah
Armistead, J. R.	Prichard—Mobile	Blake, R. F.	Haleyville—Winston
Armour, W. S.	Birmingham—Jefferson	Blake, Theo. M.	Toulminville—Mobile
Armstrong, J. H.	Selma—Dallas	Blake, Thos. M.	Double Springs—Winston
Ashcraft, J. H.	Fayette—Fayette	Blake, W. A.	Mobile—Mobile
Ashcraft, V. L.	Reform—Pickens	Blake, W. H., Jr.	Sheffield—Colbert
Ashworth, R. F.	Eclectic, Rt. 2—See Jefferson	Blakeney, A. L.	Newtonville—Fayette
Askew, William	Auburn—Lee	Blank, W. H.	Birmingham—Jefferson
Askin, H. E.	Alexander City—Tallapoosa	Blanton, Russell	Birmingham—Jefferson
Atwood, A. L.	Birmingham—Jefferson	Block, W. H.	Hartselle—Morgan
Auston, P. W.	Shawmut—Chambers	Blount, W. J.	Millry—Washington
Awtrey, H. S.	Ashville—St. Clair	Blue, Jas. H.	Bessemer—Jefferson
		Blue, Jno. H.	Montgomery—Montgomery
Bains, R. C.	Bessemer—See St. Clair	Bobo, A. H.	Demopolis—Marengo
Baker, R. D.	Birmingham—Jefferson	Bobo, J. E.	Gadsden—Etowah
Eaker, R. W.	Dora—Walker	Bobo, J. S.	Gadsden—Etowah
Ballard, A. E.	Empire—Walker	Boggan, Jeff	Ragland—St. Clair
Banks, J. T.	Dadeville—Tallapoosa	Boggs, L. K.	Birmingham—Jefferson
Barber, W. J.	Butler—Choctaw	Bograd, Nathan	Montgomery—Montgomery
Barclift, W. C., Jr.	Birmingham—Jefferson	Bohorfoush, J. G.	Birmingham—Jefferson
Barelare, Bruno, Jr.	Birmingham—Jefferson	Bondurant, E. D.	Mobile—Mobile
Barker, H. E.	Boaz—Marshall	Bonner, G. W.	Roanoke—Randolph
Barnard, R. M.	Arab—Marshall	Booth, B. W.	Shorter—Macon
Barnes, E. B.	Boothton—Shelby	Booth, J. L.	Northport—Tuscaloosa
Barnes, J. M.	Montgomery—Montgomery	Boozar, T. S.	Montgomery—Montgomery
Barnes, R. G.	Birmingham—Jefferson	Botta, L. P.	Ensley, Birmingham—Jefferson
Barrett, M. E.	Decatur—Morgan	Boudreau, F. T.	Mobile—Mobile
Barron, J. M.	Fairfield—Jefferson	Boulware, T. M.	Birmingham—Jefferson
Bartel, R. M.	Pell City—St. Clair	Bowman, J. L.	Montgomery—Montgomery
Bartlett, H. S.	Montgomery—Montgomery	Box, T. T.	Ensley, Birmingham—Jefferson
Bashinsky, L. M.	Birmingham—Jefferson	Box, W. L.	Sulligent, Rt. 2—Lamar
Bass, H. W.	Gadsden—Etowah	Boyd, F. H.	Opelika—Lee
Bass, J. B.	Gadsden—Etowah	Brackin, O. D.	Tuscumbia—Colbert
Bates, I. C.	Dothan—Houston	Bradford, D. C.	Birmingham—Jefferson
Batson, W. P.	Fairfield—Jefferson	Bragg, E. G.	Victoria (Mail Jack)—Coffee
Baumhauer, C. A.	Mobile—Mobile	Bragg, J. C.	Decatur—Morgan

Name	Town and County	Name	Town and County
Branch, J. L.	Montgomery—Montgomery	Campbell, W. J.	Center—Cherokee
Brannon, R. M.	Birmingham—Jefferson	Cannady, N. B.	Dothan—Houston
Brannon, W. T.	Montgomery—Montgomery	Cannon, D. L.	Montgomery—Montgomery
Branscomb, Louise	Birmingham—Jefferson	Cannon, E. R.	Vredenburgh—Monroe
Brantley, J. A.	Troy—Pike	Carmichael, J. L.	Birmingham—Jefferson
Branyon, A. C.	Fayette—Fayette	Carmichael, J. N.	Fairfield—Jefferson
Braswell, W. C.	Elba—Coffee	Carmichael, W. M.	Fairfield—Jefferson
Brice, J. A.	Tarrant—Jefferson	Carpenter, B. S.	Fairfield—Jefferson
Bridges, Terrell	Montevallo—Shelby	Carpenter, J. A.	New Hope—Madison
Brindley, T. B.	Hartselle—Morgan	Carpenter, J. L.	New Hope—Madison
Bristow, B. T.	Bessemer—Jefferson	Carraway, Alfred	Gadsden—Etowah
Britton, J. W.	Foley—Baldwin	Carraway, B. M.	Birmingham—Jefferson
Britton, W. R.	Montgomery—Montgomery	Carraway, C. N.	Birmingham—Jefferson
Broach, N. L.	Pine Level—Montgomery	Carter, H. R., Jr.	Birmingham—Jefferson
Brook, C. L.	Tuscaloosa—Tuscaloosa	Carter, Melson B.	Birmingham—Jefferson
Brooks, J. O.	Hamilton—Marion	Carter, W. R.	Repton—Conecuh
Brooks, O. J.	Huntsville—Madison	Casey, A. E.	Birmingham—Jefferson
Broughton, W. E.	Perdue Hill—Monroe	Casey, M. L.	Henagar—DeKalb
Browder, E. A.	Stevenson—Jackson	Cashman, G. A.	Florence—Lauderdale
Brown, A. J.	Mobile—Mobile	Cawthon, E. W.	Plateau—Mobile
Brown, E. T.	Cleveland—Blount	Chalker, B. C.	Dothan—Houston
Brown, H. G.	Florence—Lauderdale	Chandler, J. R.	Bessemer—Jefferson
Brown, H. M.	Birmingham—Jefferson	Chapman, C. H.	Andalusia—Covington
Brown, J. L.	Gadsden—Etowah	Chapman, F. E.	Montgomery—Montgomery
Brown, J. M.	Gadsden—Etowah	Chapman, J. A.	Alexander City—Tallapoosa
Brown, James Rias	Bexar, Rt. 1—Marion	Chapman, J. C.	Birmingham—Jefferson
Brown, John Richard	Florence—Lauderdale	Chapman, J. P.	Selma—Dallas
Brown, L. L.	Mobile—Mobile	Chapman, J. R.	Alexander City—Tallapoosa
Brown, M. W.	Pratt City, Birmingham—Jefferson	Chapman, L. W.	Jackson—Clarke
Browne, Jean Clark	Vincent—Shelby	Chapman, W. S.	Jackson—Clarke
Browne, W. C.	Vincent—Shelby	Chason, O. L.	Mobile—Mobile
Brownlee, L. G.	Birmingham—Jefferson	Chenatham, T. A.	Birmingham—Jefferson
Bruce, B. S.	Opelika—Lee	Chenault, E. M.	Decatur—Morgan
Brunson, E. T.	Samson—Geneva	Chenault, F. L.	Decatur—Morgan
Bryan, J. L.	Greenville—Butler	Chenault, J. M.	Decatur—Morgan
Bryant, P. A.	Bay Minette—Baldwin	Cheney, H. W.	Florence—Lauderdale
Buchanan, J. P.	Montgomery—Montgomery	Chenoweth, A. I.	Birmingham—Jefferson
Burch, J. T.	Hartselle—Morgan	Chenoweth, Beach	Birmingham—Jefferson
Burdeshaw, H. B.	Dothan—Houston	Cherry, Alfred	Birmingham—Jefferson
Burdeshaw, S. L.	Headland—Henry	Childs, E. A.	Birmingham—Jefferson
Buresch-Henke, H.	Montgomery—Montgomery	Chilton, A. M.	Anniston—Calhoun
Burke, D. W., Jr.	Chickasaw—Mobile	Chippes, H. D. (S.)	Birmingham—Jefferson
Burke, R. P.	Montgomery—Montgomery	Chisolm, J. R.	Marion Junction—Dallas
Burkett, W. T.	Dothan—Houston	Chisolm, R. P.	Selma, Rt. 4—Dallas
Burkhead, DeWitt	Opelika—Lee	Chitwood, J. N.	Ft. Payne—DeKalb
Burleson, J. R.	Hamilton—Marion	Christian, J. S.	Alberta City (Mail Tuscaloosa)—Tusca.
Burleson, R. J.	Decatur—Morgan	Clack, J. T.	Wadley—Randolph
Burns, C. R. D.	Alabama City—Etowah	Clanton, A. W.	Millport—Lamar
Burns, E. P.	Montgomery—Montgomery	Clark, B. B.	Gadsden—Etowah
Burns, J. D.	Russellville—Franklin	Clark, C. E.	Gadsden—Etowah
Burns, W. A.	Birmingham—Jefferson	Clark, H. G.	Fairlington, Va.—See Barbour
Burrett, J. B.	Birmingham—Jefferson	Clark, R. D.	Gadsden—Etowah
Burson, E. G.	Furman—Wilcox	Clarke, N. R.	Mobile—Mobile
Burwell, P. K.	Montgomery—Montgomery	Clayton, E. C.	Leeds—Jefferson
Busby, S. S.	Hamilton—Marion	Clayton, Price	Russellville—Franklin
Bush, D. A.	New Brockton—Coffee	Cleere, R. C.	Danville—Morgan
Bush, J. D., Jr.	Birmingham—Jefferson	Clements, F. H.	Birmingham—Jefferson
Buzbee, J. E.	Ft. Payne—DeKalb	Clements, R. M.	Tuscaloosa—Tuscaloosa
Byrne, D. C., Jr.	Bellamy—Sumter	Clemons, L. H.	Brewton—Escambia
		Cleveland, C. M.	Mobile—Mobile
		Cleveland, Hunt	Anniston—Calhoun
Caffey, B. F.	Choccolocco—Calhoun	Climo, H. J.	Durham, N. C.—See Montgomery
Caine, V. H.	Orrville—Dallas	Cloud, R. E.	Ensley, Birmingham—Jefferson
Caldwell, E. V.	Huntsville—Madison	Cloyd, T. D.	Florence—Lauderdale
Caldwell, H. A.	Birmingham—Jefferson	Clyde, W. A.	Birmingham—Jefferson
Caldwell, S. W.	Huntsville—Madison	Cobbs, B. W.	Montgomery—Montgomery
Callahan, Alston	Birmingham—Jefferson	Cochran, J. P.	Birmingham—Jefferson
Callaway, Eugene	Selma—Dallas	Cochrane, R. H.	Tuscaloosa—Tuscaloosa
Callaway, R. R.	Birmingham—Jefferson	Cocke, W. T.	Demopolis—Marengo
Cameron, J. E.	Alexander City—Tallapoosa	Cogburn, H. R.	Mobile—Mobile
Cameron, T. C.	Faunsdale—Marengo	Cohen, N. R.	Montgomery—Montgomery
Camp, J. S.	Jasper—Walker	Cohn, S. K.	Birmingham—Jefferson
Camp, W. A.	Cullman—Cullman	Cole, L. G.	Talladega—Talladega
Campbell, D. J.	Dozier, RFD—Covington	Coleman, G. C.	Fairfield—Jefferson
Campbell, H. A.	Gadsden—Etowah	Coleman, L. S.	Millport—Lamar
Campbell, J. A.	Dothan—Houston	Coleman, W. E.	Birmingham—Jefferson
Campbell, S. J.	Birmingham—Jefferson		

Name	Town and County	Name	Town and County
Colley, J. O., Jr.	Troy—Pike	Day, Jane M.	Montgomery—Montgomery
Collier, J. P.	Tuscaloosa—Tuscaloosa	Day, Robert C.	Montgomery—Montgomery
Collier, S. W.	Birmingham—Jefferson	Deaver, C. W.	Birmingham—Jefferson
Collins, C. D.	Birmingham—Jefferson	Deaver, W. T.	Adamsville, Rt. 2—Jefferson
Collins, H. C.	Montgomery—Montgomery	Dedman, J. E.	Betterton, Md.—See Jefferson
Collins, T. A.	Birmingham—Jefferson	de la Garza, William	Birmingham—Jefferson
Colquitt, C. J.	Bessemer—Jefferson	Denison, G. A.	Birmingham—Jefferson
Colvin, G. W.	Lincoln—Talladega	Denney, J. L.	Alexander City—Tallapoosa
Comer, E. T.	Eufaula—Barbour	Dennis, J. W.	Auburn—Lee
Comer, R. T.	Birmingham—Jefferson	Dennis, T. E.	Monroeville—Monroe
Compton, W. W.	Black Mtn., N. C.—See Jefferson	Denson, F. H.	Bessemer—Jefferson
Connell, I. L.	Palatka, Fla.—See St. Clair	Denton, Marvin	Oneonta—Blount
Constantine, K. W.	Palm Beach Fla.—See Jefferson	Denton, N. C.	Oneonta—Blount
Conwell, H. E.	Birmingham—Jefferson	DeRamus, W. H.	Selma—Dallas
Conwill, G. B.	Tuscaloosa—Tuscaloosa	Dickey, E. W.	Hazel Green—Madison
Cooley, B. S.	Birmingham—Jefferson	Dillon, J. F., 3rd.	Montgomery—Montgomery
Copeland, M. A.	Birmingham—Jefferson	Dilworth, T. E., Jr.	Huntsville—Madison
Cornelius, L. B.	Cullman, Rt. 5—Cullman	Dinsmore, A. J.	Decatur—Morgan
Cornwell, R. A. (S.)	Birmingham—Jefferson	Dix, A. S.	Mobile—Mobile
Corrington, D. D.	Talladega—Elmore	Dixon, D. P.	Talladega—Talladega
Coston, R. M.	Birmingham—Jefferson	Dixon, R. E.	Alberta—Wilcox
Cothran, R. M.	Birmingham—Jefferson	Dodson, J. H.	Mobile—Mobile
Cotlin, C. S.	Wetumpka—Elmore	Dodson, M. H.	Mobile—Mobile
Cotton, S. F.	Lexington—Lauderdale	Dodson, R. B.	Cullman—Cullman
Couch, E. H.	Guntersville—Marshall	Doehring, E. T.	Mobile—Mobile
Couch, E. W.	Winfield—Marion	Doherty, D. H.	Selma—Dallas
Cowden, A. M.	Crichton—Mobile	Doherty, C. J.	Birmingham—Jefferson
Cowles, A. D.	Ramer—Montgomery	Donald, D. C.	Birmingham—Jefferson
Cowles, T. D.	Troy—Pike	Donald, J. M.	Birmingham—Jefferson
Cowles, W. L.	Shawmut—Chambers	Donald, W. J.	Tuscaloosa—Tuscaloosa
Cox, D. D.	Sheffield—Colbert	Donaldson, B. E.	Carbon Hill—Walker
Coyle, D. J.	Birmingham—Jefferson	Donnelly, C. A.	Birmingham—Jefferson
Craddock, French	Sylacauga—Talladega	Dorough, J. L.	DeKalb, Miss.—See Cleburne
Craddock, F. H., Jr.	Sylacauga—Talladega	Douglas, G. F.	Birmingham—Jefferson
Craig, W. J.	Decatur—Morgan	Douglas, G. F., Jr.	Birmingham—Jefferson
Crawford, J. H.	Columbiana—Shelby	Douglass, John	Birmingham—Jefferson
Crawford, J. M.	Arab—Marshall	Dowling, H. B., Jr.	Mobile—Mobile
Crawford, R. D., Jr.	Dothan—Houston	Dozier, S. M.	Fulton—Clarke
Crelly, H. C.	Birmingham—Jefferson	Drennen, Earle	Birmingham—Jefferson
Crenshaw, J. F.	Birmingham—Jefferson	DuBois, J. S.	Enterprise—Coffee
Crook, W. R.	Elba—Coffee	Duncan, M. M.	Huntsville—Madison
Cross, E. H., Jr.	Gadsden—Etowah	Duncan, W. W.	Alceville—Pickens
Crowder, J. W.	West Blocton—Bibb	Dunn, J. E.	Wetumpka—Elmore
Crutcher, J. S., Jr.	Athens—Limestone	Dunn, J. G., Jr.	Opp—Covington
Culpepper, R. A.	Cullman—Cullman	Dunn, M. C.	Florence—Lauderdale
Cunningham, J. A.	Birmingham—Jefferson	Dunning, G. J.	Linden—Marengo
Cunningham, W. A.	Birmingham—Jefferson	Dunning, G. J., Jr.	Linden—Marengo
Dabney, M. Y.	Birmingham—Jefferson	DuPree, J. W.	Opelika, Rt. 2—Lee
Dahlberg, Leora P.	Fairhope—Baldwin	Du Puy, A. J.	Athens—Limestone
Dailey, J. J.	Tunnel Springs—Monroe	Durden, J. D.	Anniston—Calhoun
Dale, S. C.	Birmingham—Jefferson	Durick, S. A.	Bessemer—Jefferson
Daly, E. W.	Birmingham—Jefferson	Dyar, J. P.	Moulton—Lawrence
Daniel, W. A., Jr.	Montgomery—Montgomery	Earl, A. R.	Mobile—Mobile
Darby, H. A.	Athens—Limestone	Eddins, W. W.	Monroeville—Monroe
Darden, S. H., Jr.	Tuscaloosa—Tuscaloosa	Edge, O. N.	Troy—Pike
Darden, W. H.	Pratt City, Birmingham—Jefferson	Edwards, D. B.	Tyler, RFD—Dallas
Dark, H. U.	Alexander City—Tallapoosa	Edwards, E. H., Jr.	Leeds—Jefferson
Davenport, L. O.	Birmingham, Rt. 2—Jefferson	Edwards, G. T.	Selma, Rt. 1—Dallas
Daves, J. G.	Cullman—Cullman	Edwards, J. E. H.	McCalla—Jefferson
Davidson, A. W.	Bessemer—Jefferson	Edwards, W. A.	Wetumpka—Elmore
Davidson, J. S.	Thomasville—Clarke	Ehlert, W. E.	Selma—Dallas
Davidson, J. W.	Brantley—Crenshaw	Eichold, Samuel	Mobile—Mobile
Davidson, M. T.	Birmingham—Jefferson	Elland, J. D.	Verbena—Chilton
Davie, N. T.	Anniston—Calhoun	Elland, R. J.	Clanton—Chilton
Davis, C. A.	Kennedy—Lamar	Elkourie, L. A.	Birmingham—Jefferson
Davis, C. S.	Mobile—Mobile	Elliott, H. R., Jr.	Birmingham—Jefferson
Davis, J. L.	St. Petersburg, Fla.—See Pickens	Ellis, J. T.	Dothan—Houston
Davis, John Walter, Jr.	Montgomery—Montgomery	Embry, J. C.	Vincent—Shelby
Davis, L. C.	Gordo—Pickens	England, F. T.	Mobile—Mobile
Davis, Luther, Jr.	Tuscaloosa—Tuscaloosa	England, J. T.	Mobile—Mobile
Davis, S. D.	Talladega—Talladega	Englebert, W. F., Jr.	Tuscaloosa—Tuscaloosa
Dawson, H. P.	Montgomery—Montgomery	Eppes, J. K.	Eufaula—Barbour
Dawson, J. R.	Uniontown—Perry	Eppes, Nell R.	Eufaula—Barbour
Dawson, L. M.	Birmingham—Jefferson	Eskew, M. H.	Uniontown—Perry
Day, Edward	Maplesville—Chilton	Evans, K. P.	Sylacauga—Talladega

Name	Town and County	Name	Town and County
Evers, Ray	Andalusia—Covington	Gilchrist, P. P.	Mobile—Mobile
Falletta, P. T.	Birmingham—Jefferson	Gill, D. G.	Montgomery—Montgomery
Farish, C. G.	Moulton—Lawrence	Gillespie, J. P., Jr.	Gadsden—Etowah
Farmer, H. R.	Fairfield—Jefferson	Gillespy, R. R. (S.)	Birmingham—Jefferson
Farrar, W. C.	Midland City, Cal.—See Jefferson	Gipson, A. C.	Gadsden—Etowah
Farrior, J. H.	Montgomery—Montgomery	Givhan, E. G., Jr.	Birmingham—Jefferson
Farrior, L. B.	Mobile—Mobile	Gladney, J. C.	Jasper—Walker
Faucett, DeWitt	Gadsden—Etowah	Glasgow, R. D.	Fairfield—Jefferson
Faucett, G. L.	Gadsden—Etowah	Glasgow, R. S.	Adamsville—Jefferson
Faulk, W. M.	Tuscaloosa—Tuscaloosa	Glasgow, T. J.	Russellville—Franklin
Fennell, R. F.	Guntersville—Marshall	Glazer, Harry	Montgomery—Montgomery
Ferguson, A. D.	Shawmut—Chambers	Glenn, E. B.	Birmingham—Jefferson
Ferguson, Hal	Birmingham—Jefferson	Godard, C. G.	Fairhope—Baldwin
Ferry, J. A.	Birmingham—Jefferson	Godbold, J. C.	Whately—Clarke
Feulner, C. D.	Selma—Dallas	Godbold, P. E.	Pine Hill—Wilcox
Field, C. H.	Birmingham—Jefferson	Godsey, Wash	Haleyville—Winston
Finlay, A. G.	Guntersville—Marshall	Goff, W. H.	Rockford—Coosa
Finley, W. A.	Cherokee—Colbert	Golden, W. C.	Clanton—Chilton
Finney, J. O.	Gadsden—Etowah	Goldner, Harry	Birmingham—Jefferson
Fisher, C. J.	Birmingham—Jefferson	Goldsmith, E. F.	Atmore—Escambia
Fisher, G. E.	Birmingham—Jefferson	Goldstein, Ben	Birmingham—Jefferson
Fitts, Alston	Tuscaloosa—Tuscaloosa	Goodall, A. G.	Birmingham—Jefferson
Flowers, J. H.	Newton, RFD—Houston	Goodall, R. G.	Birmingham—Jefferson
Flowers, P. R.	Dothan—Houston	Goode, J. H.	Tuscaloosa—Tuscaloosa
Floyd, H. T.	Auburn—Lee	Goodman, Seaburt	Birmingham—Jefferson
Floyd, S. J.	Phoenix City—Russell	Gordon, G. R. (S.)	Birmingham—Jefferson
Floyd, T. J.	Abbeville—Henry	Gordon, S. A.	Marion—Perry
Fonde, G. H.	Mobile—Mobile	Gould, K. N.	Wilsonville—Shelby
Fonde, W. G.	Mobile—Mobile	Graham, A. H.	Montgomery—Montgomery
Fonville, W. D.	Birmingham—Jefferson	Graham, G. S., Jr.	Birmingham—Jefferson
Ford, C. E.	Roanoke—Randolph	Graham, J. B.	Mobile—Mobile
Ford, C. H.	Birmingham—Jefferson	Granger, F. G.	Ashford—Houston
Ford, H. G.	Gadsden—Etowah	Grasberger, J. C.	Rt. 7, Birmingham—Jefferson
Ford, J. C.	Luverne—Crenshaw	Graves, A. W.	Gadsden—Etowah
Ford, J. W.	Gadsden—Etowah	Graves, Stuart	University—Tuscaloosa
Forney, J. M.	Birmingham—Jefferson	Gray, E. W.	Florence—Lauderdale
Foshee, R. A.	Alexander City, Rt. 5—Tallapoosa	Gray, H. E.	Anniston—Calhoun
Foster, J. O.	Luverne—Crenshaw	Gray, H. W.	Crichton—Mobile
Fox, B. A.	Birmingham—Jefferson	Grayson, A. T.	New Market—Madison
Fox, C. A.	Birmingham—Jefferson	Grayson, R. J.	Selma—Dallas
Frank, H. W.	Gadsden—Etowah	Green, A. H.	Birmingham—Jefferson
Franklin, C. M.	Union Springs—Bullock	Green, Elbert Paul	Birmingham—Jefferson
Franklin, H. G.	Thorsby—Chilton	Green, Elbert Pierce	Jacksonville—Calhoun
Frantz, W. E.	Gadsden—Etowah	Green, R. C.	Birmingham—Jefferson
Frazer, B. F.	Lafayette—Chambers	Greene, G. B.	Birmingham—Jefferson
Frazer, E. B.	Mobile—Mobile	Greene, J. H.	Whistler—Mobile
Frederick, R. H.	Red Bay—Franklin	Greer, H. D.	Decatur—Morgan
Freeman, S. M., Jr.	Birmingham—Jefferson	Gresham, G. L.	Speigner—Elmore
Friday, W. C.	Sylacauga—Talladega	Gresham, W. A.	Russellville—Franklin
Friedman, L. L.	Birmingham—Jefferson	Griffin, B. G.	Praco—Jefferson
Fudge, Walter	Lamison—Wilcox	Griffin, G. W.	Birmingham—Jefferson
Gafford, A. V.	Alabama City—Etowah	Griffith, H. A.	Sheffield—Colbert
Gaillard, T. H.	Magnolia—Marengo	Grimes, J. T.	Enterprise—Coffee
Gaines, C. D.	Birmingham—Jefferson	Grimes, O. R.	Gadsden—Etowah
Gaines, H. F.	Birmingham—Jefferson	Grosfeld, W. J.	Decatur—Morgan
Gaines, J. L.	Crossville—DeKalb	Gross, C. M.	Cullman, Rt. 3—Cullman
Gaines, M. T.	Toulminville—Mobile	Gross, R. M.	Cullman—Cullman
Gaines, W. D.	Atmore—See Chambers	Grote, C. A.	Huntsville—Madison
Galbraith, J. G.	Birmingham—Jefferson	Grubbs, R. J.	Fayette—See Jefferson
Galloway, F. W.	Floral—Covington	Guest, R. J., Jr.	Ft. Payne—DeKalb
Garber, J. R.	Birmingham—Jefferson	Guice, C. L.	Gadsden—Etowah
Garlington, R. B.	Brilliant—Marion	Guin, J. C., Sr.	Moore's Bridge—Tuscaloosa
Garlington, W. H.	Birmingham—Jefferson	Guin, J. C., Jr.	Tuscaloosa—Tuscaloosa
Garmon, C. N.	Rt. 2, Bessemer—Jefferson	Gully, V. S.	Butler—Choctaw
Garrison, J. E.	Birmingham—Jefferson	Gunter, W. A., 3rd	Montgomery—Montgomery
Gary, Loren, Jr.	Tuscumbia—Colbert	Guthrie, R. F.	Birmingham—Jefferson
Gary, R. E.	Tuscumbia—Colbert	Guyton, T. M.	Decatur—Morgan
Gay, A. J.	Roanoke—Randolph	Gwin, P. E.	Sumiton—Walker
Gay, J. S.	Ashland—Clay	Gwynn, H. B.	Mobile—Mobile
Gay, N. S.	Whistler—Mobile	Haas, T. D.	Mobile—Mobile
Gay, O. F.	Ft. Payne—DeKalb	Habeeb, Alfred	Birmingham—Jefferson
Gayden, L. R.	Montgomery—Montgomery	Hagood, D. S.	Montgomery—Montgomery
Gehrken, H. S.	Birmingham—Jefferson	Hagood, J. W.	Evergreen—Conecuh
Gibson, E. L.	Enterprise—Coffee	Haigler, J. R.	Montgomery—Montgomery
		Hail, R. A.	Robertsdale—Baldwin

Name	Town and County	Name	Town and County
Hairston, W. G.	Birmingham—Jefferson	Hodge, E. K.	Davison—Tallapoosa
Haisten, D. C.	Dothan—Houston	Hodges, E. Julian	Scottsboro—Jackson
Hale, R. E.	Bellamy—Sumter	Hodges, Rayford	Scottsboro—Jackson
Hall, G. W.	Northport—Tuscaloosa	Hodgson, P. M.	Stockton—Baldwin
Hall, S. P., Jr.	Scottsboro—Jackson	Hodo, H. G., Jr.	Fayette—Fayette
Hamil, J. Y.	Decatur—Morgan	Hogan, E. P.	Birmingham—Jefferson
Hamilton, G. C.	Piedmont—Calhoun	Hogan, G. A.	Birmingham—Jefferson
Hamilton, S. G.	Tuscaloosa—Tuscaloosa	Hogan, M. D.	Boonton, N. J.—See Jefferson
Hamm, Pat	Huntsville—Madison	Holding, B. F.	Montgomery—Montgomery
Hamner, H. T.	Camp Hill—Tallapoosa	Holler, C. A. F.	Gadsden—Etowah
Hamner, L. H.	Dadeville—Tallapoosa	Holley, A. F.	Brewton—Escambia
Hamner, S. C.	Andalusia—Covington	Holley, H. L.	Birmingham—Jefferson
Hamrick, R. A.	Fairfield—Jefferson	Holley, J. F.	Lockhart—Covington
Hamrick, R. H.	Birmingham—Jefferson	Holliman, J. D.	Huntsville—Madison
Hanby, E. K.	Attalla—Etowah	Hollingsworth, P. L.	Belleville—Conecuh
Hand, L. M.	Demopolis—Marengo	Hollis, L. W.	Mobile—Mobile
Hankins, G. M.	Fairfield—Jefferson	Hollis, M. C.	Winfield—Marion
Hannon, W. C.	Mobile—Mobile	Holloway, H. S.	Notasulga—Macon
Hansard, W. S.	Henagar, RFD—DeKalb	Holman, N. W.	Ozark—Dale
Hardin, S. T.	Tuscaloosa—Tuscaloosa	Holmes, W. C.	Foley—Baldwin
Hardwick, J. L.	Talladega—Talladega	Hope, J. C.	Mobile—Mobile
Hardy, W. B.	Birmingham—Jefferson	Hopkins, P. I.	Dothan—Houston
Hargis, A. S., Jr.	Ensley, Birmingham—Jefferson	Horn, J. R.	Bessemer—Jefferson
Hargis, E. H.	Birmingham—Jefferson	Horn, S. W.	Bessemer—Jefferson
Harper, R. E.	Tuscumbia—Colbert	Horsley, H. L.	Boaz—Marshall
Harper, W. F.	Selma—Dallas	Hough, J. S.	Montgomery—Montgomery
Harris, A. B.	Birmingham—Jefferson	Howard, P. J.	Mobile—Mobile
Harris, Edward A.	Birmingham—Jefferson	Howe, C. D.	Birmingham—Jefferson
Harris, Esau A.	Bessemer—Jefferson	Howell, J. P.	Selma—Dallas
Harris, F. W.	Birmingham—Jefferson	Howell, J. V.	Marion—Perry
Harris, H. A.	Birmingham—Jefferson	Howell, W. E.	Haleyville—Winston
Harris, H. P.	Bessemer—Jefferson	Howle, J. A.	Hartselle—Morgan
Harris, R. R.	Birmingham—Jefferson	Hubbard, L. H.	Montevallo—Shelby
Harris, Seale	Birmingham—Jefferson	Hubbard, L. W.	Tarrant—Jefferson
Harris, W. M., Jr.	Birmingham—Jefferson	Hubbard, T. B.	Montgomery—Montgomery
Harrison, K. W.	Enterprise—Coffee	Huckaby, W. R.	Guntersville—Marshall
Harrison, W. G.	Birmingham—Jefferson	Hudson, H. C.	Birmingham—Jefferson
Hartung, C. F.	Bridgeport—Jackson	Huey, T. F.	Anniston—Calhoun
Harwood, R. E.	Gainesville—Sumter	Huey, T. F., Jr.	Anniston—Calhoun
Haun, C. A.	Ensley, Birmingham—Jefferson	Hughes, B. A.	Birmingham—Jefferson
Hayes, C. P.	Elba—Coffee	Hughes, J. W.	Decatur—Morgan
Hayes, J. P.	Clanton—Chilton	Hughes, M. P.	Gadsden—Etowah
Haygood, J. K.	Union Springs—Bullock	Hughes, V. P.	Cullman—Cullman
Haynes, W. G.	Birmingham—Jefferson	Hunt, H. C.	Livingston—Sumter
Hays, J. H.	Birmingham—Jefferson	Hunt, M. C.	Fairfax—Chambers
Heacock, J. D.	Birmingham—Jefferson	Hunt, Marston	Boaz—Marshall
Heard, W. L.	Mobile—Mobile	Hunter, J. W., Jr.	Birmingham—Jefferson
Heflin, Wyatt	Birmingham—Jefferson	Hurst, J. C.	Opp—Covington
Heiter, W. L.	Mobile—Mobile	Hutto, A. S.	Pinson—Jefferson
Henderson, A. D.	Mobile—Mobile	Hyatt, E. M.	Albertville—Marshall
Henderson, E. A.	Opelika—Lee		
Henderson, H. H., Jr.	Birmingham—Jefferson	Imler, A. E.	Birmingham—Jefferson
Henderson, T. B., Jr.	Mobile—Mobile	Inge, F. M.	Mobile—Mobile
Hendrix, C. V.	Oneonta—Blount	Inge, J. T.	Mobile—Mobile
Hendrix, R. Walker	Evergreen—Conecuh	Ingram, G. H.	Tuscaloosa—See Mobile
Hermann, R. C.	Selma—Dallas	Irons, R. A.	Thomasville—Clark
Herrin, C. E.	Cullman—Cullman	Irwin, R. P.	Moulton—Lawrence
Hester, F. L.	Coatopa, RFD—Sumter	Irwin, W. H.	Birmingham—Jefferson
Hicks, D. M.	Cottonwood—Houston	Irwin, W. W.	Moulton—Lawrence
Hicks, J. B.	Montgomery—Montgomery	Isbell, A. L.	Albertville—Marshall
Hightower, R. G.	Birmingham—Jefferson	Isbell, E. A.	Gadsden—Etowah
Hill, H. W.	Carrollton—Pickens	Issos, D. N.	Birmingham—Jefferson
Hill, J. F.	Montgomery—Montgomery	Ivey, W. H.	Jasper—Walker
Hill, L. L., Jr.	Montgomery—Montgomery		
Hill, R. C.	York—Sumter	Jabour, E. P.	Montgomery—Montgomery
Hill, Robert Lee	Haleyville—Winston	Jackson, A. A.	Florence—Lauderdale
Hill, Robert Leroy	Winfield—Marion	Jackson, A. C.	Jasper—Walker
Hill, R. S.	Montgomery—Montgomery	Jackson, B. F.	Montgomery—Montgomery
Hill, V. H.	Mobile—Mobile	Jackson, B. F., Jr.	Montgomery—Montgomery
Hill, W. E. (S.)	Carrollton—Pickens	Jackson, C. A.	York—Sumter
Hillhouse, J. L.	Birmingham—Jefferson	Jackson, D. E.	Lester—Limestone
Hilson, Lewis	Dothan—Houston	Jackson, H. L.	Birmingham—Jefferson
Hilt, J. L.	Lineville—Clay	Jackson, J. A.	Sulligent—Lamar
Hines, J. A.	Siluria—Shelby	Jackson, L. F.	Panola—Sumter
Hinton, L. H.	Mobile—Mobile	Jackson, N. E.	Florence—Lauderdale
Hirsh, J. E.	Birmingham—Jefferson	Jenkins, J. F.	Birmingham—Jefferson

Name	Town and County	Name	Town and County
Jenkins, J. F., Jr.	Birmingham—Jefferson	Knight, J. H.	Birmingham—Jefferson
Johns, L. J.	Birmingham—Jefferson	Knowles, C. M., Jr.	Phoenix City—Russell
Johnson, B. K.	Flat Creek—Jefferson	Kocour, E. J.	Montgomery—Montgomery
Johnson, C. E.	Tuscaloosa—Tuscaloosa	Kracke, R. R.	Birmingham—Jefferson
Johnson, Claud	Montgomery—Montgomery	Krout, C. F.	Brent—Bibb
Johnson, G. E.	Auburn—Lee	Kyser, J. A.	Madison—Madison
Johnson, G. T.	Mobile—Mobile	Kyzar, J. H.	Andalusia—Covington
Johnson, H. N.	New York—See Montgomery		
Johnson, J. F.	Gardendale—Jefferson	Lafferty, C. R.	Montgomery—Montgomery
Johnson, J. H.	Clanton—Chilton	Lamar, C. L.	Birmingham—Jefferson
Johnston, F. T.	Brundidge—Pike	Lamberth, W. C.	Alexander City—Tallapoosa
Johnston, Hardee	Birmingham—Jefferson	Langdon, H. R.	Birmingham, Rt. 8—Jefferson
Johnston, I. L.	Samson—Geneva	Lange, C. E. F.	Chickasaw—Mobile
Johnston, J. C.	Chapman—Butler	Lary, J. H.	Huntsville—Madison
Johnston, J. D.	Brundidge—Pike	Laslie, C. G.	Montgomery—Montgomery
Jones, C. T.	Newville—Henry	Laslie, J. Cobb	Montgomery—Montgomery
Jones, G. W.	Parrish—Walker	Latiolais, S. G.	Dothan—Houston
Jones, I. N.	Greensboro—Hale	Laughlin, J. B.	Huntsville—Madison
Jones, J. A., Jr.	Montgomery—Montgomery	Lavender, B. N.	Albertville—Marshall
Jones, J. P.	Camden—Wilcox	Lavender, C. B.	Falkville—See Jefferson
Jones, T. J.	Marion—Perry	Lavender, C. W.	Hartselle—Morgan
Jones, U. L.	Brooklyn—Conecuh	Lawrence, C. O.	Clanton—Chilton
Jones, Walter C.	Birmingham—Jefferson	Lawrence, Toombs	Tuscaloosa—Tuscaloosa
Jones, Wm. C.	Mobile—Mobile	Lawson, C. L.	Gadsden—Etowah
Jones, W. N.	Birmingham—Jefferson	Lawson, Nettie B.	Gadsden—Etowah
Jordan, D. C.	Guntersville—Marshall	Leach, C. N.	New York—See Montgomery
Jordan, H. C.	Robertsdale—Baldwin	Leach, J. E.	Gadsden—Etowah
Jordan, H. W.	Robertsdale—Baldwin	Leach, Sydney	Tuscaloosa—Tuscaloosa
Jordan, James	McKenzie—Butler	Leatherwood, E. F.	Hayneville—Lowndes
Jordan, J. L., Jr.	Huntsville—Madison	Lee, A. B.	Lanett—Chambers
Jordan, J. S.	Birmingham—Jefferson	Lee, F. J.	Luverne—Crenshaw
Jordan, Jos. Wiley	Ashland—Clay	Lee, J. M.	Birmingham—Jefferson
Jordan, O. L.	Tuscaloosa—Tuscaloosa	Lee, L. T.	Selma—Dallas
Jordan, W. F.	Huntsville—Madison	Leland, Joseph	Birmingham—Jefferson
Jordan, W. M.	Birmingham—Jefferson	Lester, B. S.	Birmingham—Jefferson
Joseph, K. N.	Birmingham—Jefferson	Lester, R. P.	Mobile—Mobile
Joubert, E. J., Jr.	Foley—Baldwin	Lett, E. R.	Tallasee—Elmore
Justice, J. D.	Birmingham—Jefferson	Levi, I. P.	Anniston—Calhoun
		Lewis, C. F.	Birmingham—Jefferson
Kahn, S. A.	Birmingham—Jefferson	Lewis, H. J.	Birmingham—Jefferson
Kaiser, E. N.	Montgomery—Montgomery	Lewis, T. K.	Birmingham—Jefferson
Kay, F. A.	Birmingham—Jefferson	Leyden, H. A.	Anniston—Calhoun
Keith, G. W.	Carbon Hill—Walker	Lidikay, C. J.	Demopolis—Marengo
Kelley, R. H.	Pompton Lake, N. J.—See Jefferson	Liebeskind, M. M.	Mobile—Mobile
Kelly, E. L.	Repton—Conecuh	Lightcap, C. A.	Mobile—Mobile
Kenan, James	Selma—Dallas	Lightfoot, P. M.	Shorter—Macon
Kendrick, James Erasmus	Greenville—Butler	Linder, B. G.	Birmingham—Jefferson
Kendrick, James Evans	Luverne—Crenshaw	Linder, Hugh M. C.	Birmingham—Jefferson
Kennedy, B. H., Jr.	Birmingham—Jefferson	Lineberry, E. D.	Birmingham—Jefferson
Kennedy, F. F.	Birmingham—Jefferson	Linn, J. E.	Birmingham—Jefferson
Kennedy, J. J.	Tuscaloosa—Tuscaloosa	Lisenby, J. O.	Atmore—Escambia
Kennedy, W. C., Jr.	Florence—Lauderdale	Little, E. G.	Gadsden—Etowah
Kesmodel, K. F.	Birmingham—Jefferson	Little, J. H.	Mobile—Mobile
Keyton, J. A.	Dothan—Houston	Little, S. G.	Birmingham—Jefferson
Killian, C. D.	Ft. Payne—DeKalb	Littlejohn, W. S.	Birmingham—Jefferson
Killingsworth, N. W.	Brundidge—Pike	Littlepage, G. F.	Sheffield—Colbert
Kilpatrick, G. C.	Mobile—Mobile	Littlepage, T. M.	Butler—Choctaw
Kilpatrick, L. A.	Gadsden—Etowah	Livingston, J. A.	Birmingham—Jefferson
Kimbrough, C. E.	Linden—Marengo	Lloyd, W. K.	Anniston—Calhoun
Kimbrough, J. B. B.	Prichard—Mobile	Locke, W. W.	Birmingham—Jefferson
Kimbrough, R. M.	Powderly—Jefferson	London, I. D.	Birmingham—Jefferson
Kimbrough, W. E.	Chatom—Washington	Long, D. J.	Montgomery—Montgomery
Kimney, J. M.	Elba—Coffee	Long, I. R.	Montgomery—Montgomery
Kincannon, L. T.	Birmingham—Jefferson	Long, J. R.	Marion—Perry
King, R. T.	Jackson—Clarke	Long, R. N.	Selma—Dallas
Kinkead, K. J.	Birmingham—Jefferson	Long, W. W.	Birmingham—Jefferson
Kirby, L. E.	Birmingham—Jefferson	Love, J. T.	Birmingham—Jefferson
Kirk, A. A.	Tuscaloosa—Tuscaloosa	Lovelady, R. G.	Birmingham—Jefferson
Kirk, A. T.	Gordo, Rt. 2—Pickens	Lovelady, W. H.	Hartselle—Morgan
Kirklin, M. A.	Prichard—Mobile	Lovell, D. L.	Birmingham—Jefferson
Kirkpatrick, M. B.	Montgomery—Montgomery	Lovett, W. J.	Sipsey—Walker
Kirkpatrick, S. M.	Selma—Dallas	Lowvorn, R. C.	Newell—Randolph
Kirschenfeld, Jack	Ft. Deposit—Lowndes	Lucas, R. L.	Anniston—Calhoun
Klapper, Margaret S.	Birmingham—Jefferson	Lucius, R. S.	Eutaw—Greene
Klein, W. W.	Altoona, Rt. 2—Blount	Luckie, K. E.	Selma—Dallas
Klie, H. B.	Forkland—Greene	Lull, Cabot	Birmingham—Jefferson

Name	Town and County	Name	Town and County
Lumpkin, H. G.	Montgomery—Montgomery	McEniry, E. P.	Dolomite—Jefferson
Lupton, F. A.	Birmingham—Jefferson	McFatter, T. K.	Dothan—Houston
Luton, N. S.	Phoenix City—Russell	McGahey, R. G.	Birmingham—Jefferson
Lyles, Robin	Leighton—Colbert	McGahey, T. P.	Birmingham—Jefferson
Lynch, M. H.	Scottsboro—Jackson	McGehee, H. T.	Birmingham—Jefferson
MacIntyre, D. S.	Birmingham—Jefferson	McGhee, Moses	Daleville—Dale
MacLennan, E. R.	Opp—Covington	McGrath, W. E.	Sheffield—Colbert
MacQueen, J. W.	Birmingham—Jefferson	McGraw, F. J.	Birmingham—Jefferson
Maddox, John W.	Ardmore—Limestone	McInnis, W. R.	Clio—Barbour
Magruder, T. V.	Birmingham—Jefferson	McIntosh, E. L.	Camden—Wilcox
Magruder, T. V., Jr.	Birmingham—Jefferson	McKinnon, H. A.	Birmingham—Jefferson
Majors, W. B. (S.)	Tuscaloosa—Tuscaloosa	McKissack, W. M.	Huntsville—Madison
Majure, E. O.	Tallassee—Elmore	McLain, A. D.	Salem—Lee
Malouf, G. M.	Brantley—Crenshaw	McLaughlin, J. D.	Blue Springs—Barbour
Manasco, Hobson	Haleyville—Winston	McLean, C. C.	Birmingham—Jefferson
Maneval, K. V.	Parrish—Walker	McLeod, C. D.	Andalusia—Covington
Manley, J. R.	Roanoke—Randolph	McLeod, J. C.	Bay Minette—Baldwin
Maples, J. H.	Athens—Limestone	McLester, J. B.	Birmingham—Jefferson
Maples, W. E.	Athens—Limestone	McLester, J. S.	Birmingham—Jefferson
Markheim, H. R.	Baltimore—See Cullman	McNeal, Alice	Birmingham—Jefferson
Marlette, G. C.	New Orleans—See Escambia	McNease, B. W.	Fayette—Fayette
Marrs, T. C.	Montgomery—Montgomery	McQueen, J. P.	Birmingham—Jefferson
Marsh, J. S.	Collinsville—DeKalb	McQuiddy, R. C.	Birmingham—Jefferson
Marshall, W. L.	Langdale—Chambers	McVay, L. V.	Mobile—Mobile
Martin, C. T.	Headland—Henry	Meadows, H. H., Jr.	Montgomery—Montgomery
Martin, F. J.	Montgomery—Montgomery	Meadows, J. A.	Birmingham—Jefferson
Martin, H. F.	Mobile—Mobile	Meeker, W. R.	Mobile—Mobile
Martin, J. A.	Montgomery—Montgomery	Meeks, A. A.	Foley—Baldwin
Martin, J. C.	Cullman—Cullman	Mehaffey, J. W.	Birmingham—Jefferson
Martin, R. A.	Pell City—St. Clair	Meharg, S. T.	Anniston—Calhoun
Martin, T. E.	Guntersville—Marshall	Meharg, W. G.	Anniston—Calhoun
Martin, T. M.	Plantersville—Dallas	Meigs, J. H.	Anniston—Calhoun
Martin, W. A.	Birmingham—Jefferson	Meigs, S. C.	Centerville—Bibb
Martin, W. B.	Warrior—Jefferson	Melton, T. A.	Atmore—Escambia
Mason, D. A.	Selma—Dallas	Meneray, W. E.	Gadsden—Etowah
Mason, J. M.	Birmingham—Jefferson	Mertins, P. S., Jr.	Montgomery—Montgomery
Mason, J. M. III	Birmingham—Jefferson	Meyer, B. S.	Birmingham—Jefferson
Massey, B. J.	Enterprise—Coffee	Meyer, Jerome	Birmingham—Jefferson
Mastin, O. C.	Wedowee—Randolph	Miles, N. E.	Birmingham—Jefferson
Matthews, A. D.	Ozark—Dale	Miles, W. C.	Oneonta—Blount
Matthews, C. N.	Floral—Covington	Miller, D. A. (S.)	Birmingham—Jefferson
Maury, F. H.	Mobile—Mobile	Miller, J. A.	Wylam—Jefferson
Maxwell, W. J.	Sheffield—Colbert	Miller, S. T.	Yantley—Choctaw
May, W. L.	Powhatan—Jefferson	Miller, W. L.	Gadsden—Etowah
May, W. P.	Montgomery—Montgomery	Millett, G. W.	Montgomery—Montgomery
Mayer, K. A.	Lower Peach Tree—Wilcox	Milligan, R. L.	Montgomery—Montgomery
Mayfield, P. B.	Tuscaloosa—Tuscaloosa	Minnich, W. C.	Mobile—Mobile
Mayhall, C. V.	Athens—Limestone	Minor, W. H.	Mobile—Mobile
Mazyck, Arthur	Dothan—Houston	Minot, Dobbs	Tuscaloosa—Tuscaloosa
McAdory, E. D.	Cullman—Cullman	Minus, J. A.	Epes—Sumter
McBurney, Ralph	Birmingham—Jefferson	Mitchell, G. J.	Mobile—Mobile
McCain, W. J.	Livingston—Sumter	Mitchell, J. I.	Haleville—Winston
McCall, D. T.	Mobile—Mobile	Mitchell, S. A.	Rt. 7, Birmingham—Jefferson
McCann, R. B.	Seale—Russell	Mitchell, W. B.	Anniston—Calhoun
McCarn, D. W.	Warrior—Jefferson	Mohr, C. A.	Mobile—Mobile
McCarn, O. C., Jr.	Birmingham—Jefferson	Monsky, D. B.	Montgomery—Montgomery
McCaslan, W. H.	Union Springs—Bullock	Montgomery, J. Ethel	Belle Ellen—Bibb
McClure, H. A.	Mayo, Fla.—See Lamar	Moody, E. F.	Dothan—Houston
McClure, Herbert Cecil	Mobile—Mobile	Moody, Maxwell	Tuscaloosa—Tuscaloosa
McConnico, F. H.	Montgomery—Montgomery	Moody, W. E.	Birmingham—Jefferson
McCord, Bert	Gadsden—Etowah	Moore, C. R.	Clanton—Chilton
McCorkle, F. W.	Gadsden—Etowah	Moore, C. W. C.	Talladega—Talladega
McCown, W. G.	Huntsville—Madison	Moore, E. G.	Tallassee—Elmore
McCoy, D. A.	Birmingham—Jefferson	Moore, E. L.	Fairfield—Jefferson
McCoy, W. C.	Birmingham—Jefferson	Moore, E. M.	Prattville—Autauga
McCrary, G. C.	Jackson—Clarke	Moore, J. G.	Birmingham—Jefferson
McCraw, R. T.	Oxford—Calhoun	Moore, J. H.	Lafayette—Chambers
McCullough, G. C. (S.)	Jacksonville, N. C.—See Jefferson	Moore, J. W.	Clanton—Chilton
McDaniel, Joe Crosby	Birmingham—Jefferson	Moore, L. H.	Orrville—Dallas
McDaniel, Jos. Columbus	York—Sumter	Moore, W. R.	Florence—Lauderdale
McDiarmid, T. S.	Gadsden—Etowah	Moore, W. W.	Camden—Wilcox
McDonald, C. W.	Union Springs—Bullock	Moorer, M. L.	Mt. Vernon—Mobile
McDonald, Juanita B.	Andalusia—Covington	Moorman, J. D.	Huntsville—Madison
McDowell, J. F.	Birmingham—Jefferson	Moorman, M. R.	Huntsville—Madison
McElroy, J. M.	Attalla—Etowah	Morgan, J. O.	Gadsden—Etowah
		Morgan, J. R.	Birmingham—Jefferson

Name	Town and County
Morgan, F. A., Jr.	Adamsville, Rt. 2—Jefferson
Morland, H. C.	Birmingham—Jefferson
Morris, H. B.	Birmingham—Jefferson
Morris, H. R.	Birmingham—Jefferson
Morrow, R. P.	West Point (Ga.)—See Chambers
Morton, Benjamin	Birmingham—Jefferson
Morton, L. E.	Anniston—Calhoun
Moseley, S. O.	Selma—Dallas
Motley, J. P.	Ensley, Birmingham—Jefferson
Motley, S. D.	Ensley, Birmingham—Jefferson
Mount, Bernard	Montgomery—Montgomery
Mulherin, H. G.	Mobile—Mobile
Murphree, C. L.	Birmingham—See Etowah
Murphree, L. R.	Decatur—Morgan
Murphy, C. M.	Aliceville—Pickens
Murphy, G. E.	Birmingham—Jefferson
Murphy, Iva G.	Alderson, W. Va.—See Escambia
Murphy, S. S., Jr.	Mobile—Mobile
Muscat, J. O.	Mobile—Mobile
Muscat, V. P.	Mobile—Mobile

Nabers, S. F.	Birmingham—Jefferson
Neal, R. D.	Grove Hill—Clarke
Neely, M. G.	Fairfield—Jefferson
Nelson, W. B.	Bay Minette—Baldwin
Nethery, S. J.	Belle Mina—Limestone
Nettles, T. E.	Monroeville—Monroe
Neville, C. W.	Birmingham—Jefferson
Newburn, G. W.	Prichard—Mobile
Newburn, G. W., Jr.	Prichard—Mobile
Newdorp, John	Montgomery—Montgomery
Newfield, S. U.	Birmingham—Jefferson
Newman, L. D.	Mobile—Mobile
Newman, Lucian	Dadeville—Tallapoosa
Newton, G. E.	Prattville—Autauga
Nice, C. M.	Birmingham—Jefferson
Nichols, Cobb	Rockville—Clarke
Nicholson, Cooper	Centerville—Bibb
Nicholson, L. B.	Gadsden—Etowah
Nicholson, W. H., Jr.	Fairfield—Jefferson
Nickerson, Paul	Sylacauga—Talladega
Nickson, H. C.	Montgomery—Montgomery
Noble, William	Ft. Payne—DeKalb
Nodine, E. R.	Montgomery—Montgomery
Noel, W. E.	Boaz—Marshall
Noland, Lloyd	Fairfield—Jefferson
Noojin, R. O.	Birmingham—Jefferson
Norman, E. T.	Greensboro—Hale
North, W. E.	Prichard—Mobile
Norton, E. M.	Birmingham—Jefferson
Norton, R. O.	Louisville—Barbour
Novell, L. R.	Florence—Lauderdale
Nungester, G. H.	Decatur—Morgan
Nye, G. E.	Scottsboro—Jackson

O'Connell, Edward	Birmingham—Jefferson
O'Connell, G. A.	Anniston—Calhoun
O'Dell, J. W.	Birmingham—Jefferson
Odom, C. W.	Acmar—St. Clair
Odom, H. G.	Irondale—Jefferson
O'Gwynn, J. C., Jr.	Mobile—Mobile
Oliver, E. B.	Birmingham—Jefferson
Oliver, J. T.	Tuscaloosa—Tuscaloosa
Olivet, C. A.	Haleyville—Winston
O'Neal, J. P.	Andalusia—Covington
Orr, W. L.	Ozark—Dale
Orton, A. E.	Bessemer—Jefferson
Oswalt, G. G.	Mobile—Mobile
Owen, H. R.	Gadsden—Etowah
Owens, A. H.	Ashland—Clay
Owens, A. H., Jr.	Ashland—Clay
Owings, T. L.	Sylacauga—Talladega
Owings, W. J. B.	Brent—Bibb
Owsley, L. H.	Opelika—Lee
Owsley, W. M.	Eclectic—Elmore

Name	Town and County
Owsley, W. S.	Opelika—Lee
Paine, C. H., Jr.	Anniston—Calhoun
Palmer, Julian G.	Opelika—Lee
Park, M. O.	Chickasaw—Mobile
Park, M. O.	Prichard—See Shelby
Parker, C. E. R.	Montgomery—Montgomery
Parker, D. F.	Browning, Mont.—See Bullock
Parker, H. J.	Huntsville—Madison
Parker, L. D.	Andalusia—Covington
Parker, L. L.	Andalusia—Covington
Parker, S. R.	Aliceville—Pickens
Parnell, C. N.	Maplesville—Chilton
Parnell, L. C.	Montevallo—Shelby
Parris, Briggs	Geraldine—DeKalb
Parrish, W. A.	Midland City—Dale
Parsons, J. L.	Ensley—Jefferson
Parsons, W. C.	Birmingham—Jefferson
Parsons, W. S.	Mobile—Mobile
Partlow, R. C.	Tuscaloosa—Tuscaloosa
Partlow, W. D.	Tuscaloosa—Tuscaloosa
Partridge, C. V.	Mobile—Mobile
Patton, T. H., Jr.	Tuscaloosa—Tuscaloosa
Patton, W. B.	Birmingham—Jefferson
Paul, W. G.	Geneva—Geneva
Paull, B. P.	Birmingham—Jefferson
Payne, B. C.	Lewisburg—Jefferson
Payne, E. C.	New Castle—Jefferson
Payne, T. J., Jr.	Jasper—Walker
Payne, W. N.	Bessemer—Jefferson
Peacock, L. E.	West Blocton—Bibb
Peake, J. D.	Mobile—Mobile
Peck, Willena	Montevallo—Shelby
Pennington, J. A.	Rt. 2, Birmingham—Jefferson
Penton, J. R.	Montgomery—Montgomery
Penton, J. R., Jr.	Montgomery—Montgomery
Perdue, J. D.	Mobile—Mobile
Perley, A. I.	Boston—See Chambers
Perry, E. B.	Birmingham—Jefferson
Perry, J. W.	Montgomery—Montgomery
Peters, G. S.	Montgomery—Montgomery
Peterson, E. J.	Birmingham—Jefferson
Peterson, J. J.	Mobile—Mobile
Petrick, A. C.	Fairhope—Baldwin
Pettus, J. J.	Belle Mina—Limestone
Pfeiffer, R. B.	Birmingham—Jefferson
Phillips, G. W.	Birmingham—Jefferson
Pierce, W. M.	Tuscumbia—Colbert
Pierson, T. C.	Alden—Jefferson
Pilkington, J. S.	Selma—Dallas
Pitchford, J. D.	Sylacauga—Talladega
Pitt, C. K.	Decatur—Morgan
Pitts, E. B.	Fairfield—Jefferson
Planck, E. H., Jr.	Anniston—Calhoun
Pohl, W. F.	Sycamore—Talladega
Poole, W. L.	Birmingham—Jefferson
Pope, E. C.	Birmingham—Jefferson
Posey, B. F.	Birmingham—Jefferson
Posey, J. F.	Anniston—Calhoun
Posey, L. C.	Birmingham—Jefferson
Pow, J. R.	Woodward—Jefferson
Powell, H. B.	Gadsden—Etowah
Powers, A. D.	Athens—Limestone
Prather, R. C.	Phoenix City—Russell
Pratt, A. C., Jr.	Centerville—Bibb
Prescott, J. L.	Birmingham—Jefferson
Prescott, W. E.	Birmingham—Jefferson
Prescott, W. E., Jr.	Birmingham—Jefferson
Price, E. S.	Tuscaloosa—Tuscaloosa
Price, L. C.	Florence—Lauderdale
Pruitt, E. P.	Rt. 1, Warrior—Jefferson
Pryor, R. B.	Mulga—Jefferson
Pugh, J. T.	Grove Hill—Clarke
Pye, Alice Hill	Montgomery—Montgomery
Ralls, A. W.	Gadsden—Etowah

Name	Town and County	Name	Town and County
Ramey, D. R., Jr.	Greensboro—Hale	Sanders, S. R.	Moulton—Lawrence
Ramsey, J. H.	Birmingham—Jefferson	Sanders, W. B.	Troy—Pike
Ransom, W. W.	Birmingham—Jefferson	Sandlin, E. G.	Holly Pond—Cullman
Rapp, E. W.	Montgomery—Montgomery	Sankey, H. J.	Nauvoo—Walker
Rawls, V. Q.	Brewton—Escambia	Saunders, J. H.	Mobile—Mobile
Ray, E. A.	Andalusia—Covington	Savage, C. H.	Prichard—Mobile
Ray, E. C.	Ensley, Birmingham—Jefferson	Savage, H. J.	Gadsden—Etowah
Ray, J. C.	Luverne—Crenshaw	Savage, Victor	Kennedy—Lamar
Ray, Weldon	Tuscaloosa—Tuscaloosa	Sawyer, H. P.	Montgomery—Montgomery
Rayfield, J. D.	Jacksonville—Calhoun	Scales, J. P.	Livingston—Sumter
Rea, J. W.	Sheffield—See Lauderdale	Scales, W. W.	Mobile—Mobile
Reagan, Cas	Birmingham—Jefferson	Scarborough, B. C.	Albertville—Marshall
Reaves, J. U.	Mobile—Mobile	Schapiro, M. M. (S.)	Ensley—Jefferson
Redden, R. H.	Sulligent—Lamar	Scheer, R. S.	Mobile—Mobile
Reid, James	Clayton—Barbour	Schmitz-Dumont, Isabella M.	Selma—Dallas
Reim, N. H.	Tuscaloosa—Tuscaloosa	Schoolar, T. E.	Centerville—Bibb
Rennie, T. L.	Pell City—St. Clair	Schrantz, F. S.	Mobile—Mobile
Reque, P. G.	Birmingham—Jefferson	Schwartz, F. F.	Birmingham—Jefferson
Reynolds, F. D.	Montgomery—Montgomery	Scofield, T. F.	Birmingham—Jefferson
Reynolds, G. C.	Brundidge—Pike	Scott, E. M.	Birmingham—Jefferson
Rhodes, C. E.	Jefferson—Marengo	Scott, E. M., Jr.	Birmingham—Jefferson
Richey, C. B.	Collinsville—DeKalb	Scott, Marvin	Headland—Henry
Richey, C. H.	Valley Head—DeKalb	Scott, W. F.	Birmingham—Jefferson
Riggs, F. W.	Montgomery—Montgomery	Scrivner, J. D.	Berry—Fayette
Rike, H. C.	Birmingham—Jefferson	Searcy, H. B.	Tuscaloosa—Tuscaloosa
Riley, H. C.	Coffee Springs—Geneva	Seay, J. E.	Birmingham—Jefferson
Riser, W. H.	Lafayette—Chambers	Segrest, G. O.	Mobile—Mobile
Riser, W. H., Jr.	Birmingham—Jefferson	Seibold, J. L.	Birmingham—Jefferson
Roach, A. N. T.	Mobile—Mobile	Self, G. W.	Trafford—Blount
Roan, A. M.	Decatur—Morgan	Selikoff, S. J.	Montgomery—Montgomery
Roberson, J. T.	Riverside—St. Clair	Sellers, D. F.	Mobile—Mobile
Roberts, J. M.	Vernon—Lamar	Sellers, H. G.	Birmingham—Jefferson
Roberts, M. J.	Mobile—Mobile	Sellers, I. J.	Birmingham—Jefferson
Roberts, S. S.	Florence—Lauderdale	Sellers, N. E.	Anniston—Calhoun
Roberts, W. S.	Birmingham—Jefferson	Sellers, W. L., Jr.	Mobile—Mobile
Robertson, B. O.	Birmingham—Jefferson	Sentell, J. H.	New Hope—Madison
Robertson, J. B.	Fayette—Fayette	Sewell, J. F.	Wetumpka—Elmore
Robertson, J. P.	Birmingham—Jefferson	Shaddix, M. L.	Alabama City—Etowah
Robinson, C. B.	Marion—Perry	Shafferman, S. L.	Columbiana—Shelby
Robinson, E. B.	Birmingham—Jefferson	Shamblin, J. L.	Tuscaloosa—Tuscaloosa
Robinson, H. W.	Edna—Choctaw	Shamblin, J. R.	Tuscaloosa—Tuscaloosa
Roe, L. W.	Mobile—Mobile	Shamblin, R. D.	Tuscaloosa—Tuscaloosa
Rogers, H. L.	Albertville—Marshall	Shamblin, W. G.	Tuscaloosa—Tuscaloosa
Rogers, J. H.	Gadsden—Etowah	Shanks, R. G.	Autaugaville—Autauga
Roscoe, G. J.	Birmingham—Jefferson	Shannon, P. W.	Birmingham—Jefferson
Rosen, H. L.	Montgomery—Montgomery	Shaw, R. E.	Whatley—Clarke
Ross, C. H.	Mobile—Mobile	Shaw, R. W.	Gilbertown—Choctaw
Rosser, W. J.	Birmingham—Jefferson	Shelamer, A. M.	Huntsville—Madison
Rountree, W. B.	Thomas Sta., Birmingham—Jefferson	Shell, J. R.	Abbeville—Henry
Rouse, C. C.	Mobile—Mobile	Shell, L. P.	Abbeville—Henry
Rowan, W. W.	Attalla—Etowah	Shelton, J. B.	Birmingham—Jefferson
Rowe, G. T.	Hanceville—Cullman	Shelton, S. W.	Montgomery—Montgomery
Rowe, H. S.	Mt. Vernon—Mobile	Shepherd, R. H.	Jasper—Walker
Rowe, J. F.	Mobile—Mobile	Sheppard, J. T.	Gadsden—Etowah
Rowe, M. S.	Gadsden—Etowah	Sherer, R. J.	Birmingham—Jefferson
Rucker, E. W., Jr.	Birmingham—Jefferson	Sherman, C. R.	Bay Minette—Baldwin
Rudder, J. W.	Toxey—Choctaw	Sherman, Morris	Sylacauga—Talladega
Rudolph, C. M.	Birmingham—Jefferson	Sherrill, J. D.	Birmingham—Jefferson
Rumpanos, S. N.	Mobile—Mobile	Shirley, J. E.	Tuscaloosa—Tuscaloosa
Russakoff, A. H.	Birmingham—Jefferson	Shores, S. S.	Carbon Hill—Walker
Russell, C. H.	Huntsville—Madison	Shropshire, C. W.	Birmingham—Jefferson
Russell, R. O.	Birmingham—Jefferson	Shugerman, H. P.	Birmingham—Jefferson
Rutherford, C. L.	Mobile—Mobile	Sigrest, O. R.	Attalla—Etowah
Ryan, J. M.	Helena—Shelby	Silberman, D. J.	Birmingham—Jefferson
		Silbermann, S. J.	New Haven—See Jefferson
Sacks, H. M.	Troy—Pike	Silvey, G. E.	Gadsden—Etowah
St. Amant, C. P.	Grove Hill—Clarke	Simmons, J. T.	Jasper—Walker
St. Peter, M. A.	Sylacauga—Talladega	Simmons, S. C., Jr.	Fairfax—Chambers
Salley, G. W.	Atmore—Escambia	Simon, H. E.	Birmingham—Jefferson
Salter, C. L.	Talladega—Talladega	Simpson, H. M.	Florence—Lauderdale
Salter, P. P.	Eufaula—Barbour	Simpson, John Wesley	Parrish—Walker
Salter, W. M.	Anniston—Calhoun	Simpson, John William	Birmingham—Jefferson
Samford, M. W.	Opelika—Lee	Simpson, W. C.	Florence—Lauderdale
Samuel, I. J.	Altoona—Etowah	Sims, A. G., Jr.	Rt. 8, Birmingham—Jefferson
Sanders, E. H.	Birmingham—Jefferson	Sims, J. A.	Fairfield—See Talladega
Sanders, J. G.	Mobile—Mobile	Singleton, G. W. F.	Detroit, Mich.—See Bibb

Name	Town and County	Name	Town and County
Siniard, E. C.	Birmingham—Jefferson	Stockton, F. E.	Birmingham—Jefferson
Sizemore, D. M.	Sulligent—Lamar	Stokes, E. M.	Montgomery—Montgomery
Skinner, M. M.	Selma—Dallas	Stone, J. J.	Pratt City—Jefferson
Skinner, P. B.	Fairhope—Baldwin	Stough, Warren V.	Anniston—Calhoun
Sledge, E. S.	Mobile—Mobile	Stough, William V.	Montgomery—Montgomery
Sloan, E. F.	Columbiana—Shelby	Stovall, H. C.	Pinckard—Dale
Smelo, L. S.	Birmingham—Jefferson	Strock, C. S.	Verbena—Chilton
Smith, C. H.	Birmingham—Jefferson	Stuart, W. W.	Selma, Rt. 1—Dallas
Smith, D. D. (S.)	Birmingham—Jefferson	Stuteville, Ethel	Birmingham—Jefferson
Smith, E. B.	Birmingham—Jefferson	Suggs, S. D.	Montgomery—Montgomery
Smith, F. C.	Bessemer—Jefferson	Summers, W. P.	Toney—Madison
Smith, G. H.	Ensley, Birmingham—Jefferson	Sumner, I. C.	Mobile—Mobile
Smith, G. R.	Ozark—Dale	Sutherland, A. R.	Whistler—Mobile
Smith, H. R.	Birmingham—Jefferson	Swann, C. L.	Leavenworth, Kan.—See Jefferson
Smith, J. C.	Birmingham—Jefferson	Sweeney, D. P. B. (S.)	Birmingham—Jefferson
Smith, J. D.	Eutaw—Greene		
Smith, J. H.	Selma—Dallas	Taggard, J. G., Jr.	Jasper—Walker
Smith, J. P.	Eutaw—Greene	Tankersley, Ernest	Samson—Geneva
Smith, J. S.	Montgomery—Montgomery	Tankersley, James	Prattville—Autauga
Smith, M. E. (S.)	San Francisco—See Morgan	Tankersley, William	Hope Hull—Montgomery
Smith, Murray	Tuskegee—Macon	Tarwater, J. S.	Tuscaloosa—Tuscaloosa
Smith, Rayford A.	Monroeville—Monroe	Tatum, A. F., Jr.	Tuscaloosa—Tuscaloosa
Smith, R. C.	Gadsden—Etowah	Tatum, S. C.	Center—Cherokee
Smith, R. J.	Fairfield—Jefferson	Taylor, A. N.	Heflin—Cleburne
Smith, T. L.	Birmingham—Jefferson	Taylor, C. H.	Bankhead—Walker
Smith, V. D.	Birmingham—Jefferson	Taylor, E. E.	Crichton—Mobile
Smith, W. H. Y.	Montgomery—Montgomery	Taylor, G. M.	Prattville—Autauga
Smith, W. L.	Montgomery—Montgomery	Taylor, J. L.	Mobile—Mobile
Snoddy, S. J.	Russellville—Franklin	Taylor, Richard V., Jr.	Mobile—Mobile
Snow, J. S.	Birmingham—Jefferson	Taylor, T. F.	Tuskegee—Macon
Snow, J. W., Jr.	Palos—Jefferson	Taylor, W. R.	Town Creek—Lawrence
Snow, W. R.	Jasper—Walker	Teague, E. B., Jr.	Homewood—Jefferson
Somerset, S. M.	Birmingham—Jefferson	Terhune, S. R.	Birmingham—Jefferson
Sorrell, L. E.	Birmingham—Jefferson	Terrill, E. C.	Mobile—Mobile
Sowell, J. L.	Jasper—Walker	Terrill, J. W.	Ensley, Birmingham—Jefferson
Sparks, D. H.	Birmingham—Jefferson	Terry, L. L.	Sylacauga—Talladega
Spearman, G. K.	Anniston—Calhoun	Thacker, V. J.	Dothan—Houston
Speir, H. P.	Greenville—Butler	Thetford, J. D.	America—Walker
Speir, P. V.	Greenville—Butler	Thigpen, C. A.	Montgomery—Montgomery
Speir, R. C.	Jackson, Miss.—See Wilcox	Thigpen, F. M.	Montgomery—Montgomery
Spies, T. D.	Birmingham—Jefferson	Thomas, A. E.	Montgomery—Montgomery
Spira, Victor	Birmingham—Jefferson	Thomas, B. F.	Auburn—Lee
Spratt, R. D.	Livingston—Sumter	Thomas, B. F., Jr.	Auburn—Lee
Spruell, W. H.	Russellville—Franklin	Thomas, E. M.	Prattville—Autauga
Spruill, G. E.	Ethelsville—Pickens	Thomas, H. H.	Birmingham—Jefferson
Stabler, A. A.	Greenville—Butler	Thompson, J. A.	Pine Apple—Wilcox
Stabler, A. L.	Birmingham—Jefferson	Thompson, W. A.	Citronelle—Mobile
Stabler, E. V.	Greenville—Butler	Thompson, W. D.	Trussville—Jefferson
Stabler, L. V.	Greenville—Butler	Thorington, T. C.	Montgomery—Montgomery
Staggers, W. L.	Benton—Lowndes	Thrower, B. F.	Enterprise—Coffee
Stallworth, C. J.	Thomaston—Marengo	Thuss, C. J.	Birmingham—Jefferson
Stallworth, E. L.	Evergreen—Conecuh	Thuss, W. G.	Birmingham—Jefferson
Stallworth, J. P.	Canoe—Escambia	Tillman, J. S.	Clio—Barbour
Stallworth, R. W.	Evergreen—Conecuh	Timberlake, Landon	Birmingham—Jefferson
Stallworth, W. A.	Frisco City—Monroe	Tippins, H. K.	Geneva—Geneva
Stanley, R. H.	Foley—Baldwin	Tippins, J. R.	Hartford—Geneva
Stansberry, C. L.	Oneonta—Blount	Tisdale, W. C.	Mt. Vernon—Mobile
Stayer, Glenn	Birmingham—Jefferson	Toole, A. F.	Talladega—Talladega
Stephens, B. A.	Lineville—Clay	Towns, T. M.	Oneonta—Blount
Stephens, D. D.	Slocumb—Geneva	Townsend, J. M. (S.)	Birmingham—Jefferson
Stephens, S. H.	Mobile—Mobile	Trammell, E. L.	Dutton—Jackson
Stephens, W. C.	Mobile—Mobile	Trapp, W. R.	Tuscumbia—Colbert
Stephenson, R. H.	Birmingham—Jefferson	Treherne, A. J.	Atmore—Escambia
Stephenson, S. L., Jr.	Birmingham—Jefferson	Trice, D. H.	Boligee—Greene
Stevens, W. R.	Bartley, W. Va.—See Tuscaloosa	Trucks, J. F.	Birmingham—Jefferson
Stevenson, F. C.	Montgomery—Montgomery	Trumper, Abraham	Montgomery—Montgomery
Stevenson, W. W.	Roanoke—Randolph	Tucker, E. W.	Fairfield—Jefferson
Stewart, G. E.	Fayette—Fayette	Tucker, W. C.	Birmingham—Jefferson
Stewart, R. C.	Sylacauga—Talladega	Turlington, L. F.	Birmingham—Jefferson
Stewart, R. L.	Birmingham—Jefferson	Turner, W. H.	Dothan—Houston
Stewart, Vera B.	Birmingham—Jefferson	Tyler, R. E.	Birmingham—Jefferson
Stewart, W. P.	Troy—Pike	Tyler, R. E. L.	Tuscaloosa—Tuscaloosa
Stickley, C. S.	Montgomery—Montgomery		
Stinson, W. E.	Gadsden—Etowah	Underwood, A. J.	Spruce Pine—Franklin
Stitt, Frank	Cullman—Cullman	Underwood, F. R.	Red Bay—Franklin
Stock, R. P.	Childersburg—Talladega	Underwood, J. W.	Birmingham—Jefferson

Name	Town and County	Name	Town and County
Underwood, N. P.	Russellville—Franklin	Wheeler, N. A., Jr.	Lafayette—Chambers
Underwood, O. O.	Phil Campbell—Franklin	Whetstone, A. K.	Sylacauga—Talladega
Underwood, R. O.	Russellville—Franklin	Whigham, A. L.	Newville—Henry
Underwood, S. S.	Birmingham—Jefferson	Whitaker, J. E.	Huntsville—Madison
Upchurch, S. E.	Birmingham—Jefferson	White, A. M.	Hartselle—Morgan
Ussery, G. C.	Roanoke—Randolph	White, M. S.	Hamilton—Marion
Ussery, J. A.	Courtland—Lawrence	White, R. L.	Mt. Andrew—Barbour
		White, W. E.	Anniston—Calhoun
		White, W. W.	Center—Cherokee
Vance, J. G.	Birmingham—Jefferson	Whitehead, V. E.	Blountsville—Blount
Van Sant, J. W.	Piedmont—Calhoun	Whiteside, H. B.	Ohatchee—Calhoun
Van Sant, T. E.	Piedmont—Calhoun	Whiteside, J. M.	Anniston—Calhoun
Van Wezel, Norman	Montgomery—Montgomery	Whiteside, M. S.	Cullman—Cullman
Vaughan, A. E.	Geneva—Geneva	Whitfield, F. S., Jr.	Demopolis—Marengo
Venning, E. W.	Guntersville—Marshall	Whitfield, J. T.	Elkmont—Limestone
Virgin, W. B.	Montgomery—Montgomery	Whitman, C. R.	Tuscumbia—Colbert
		Wiesel, B. H.	Birmingham—Jefferson
		Wikle, J. O.	Madison—Madison
Waddell, J. R.	Rogersville—Lauderdale	Wiley, C. C.	Birmingham—Jefferson
Wainwright, S. P.	Birmingham—Jefferson	Wilkerson, A. F.	Marion—Perry
Walden, J. D.	Florence—Lauderdale	Wilkerson, W. W.	Montgomery—Montgomery
Waldrep, A. C.	Red Bay—Franklin	Wilkinson, D. L.	Birmingham—Jefferson
Waldrop, A. M.	Jasper—Walker	Wilkinson, H. B.	Bishopville, S. C.—See Montgomery
Waldrop, R. W.	Bessemer—Jefferson	Wilkinson, J. E. Jr.	Prattville—Autauga
Walker, A. A.	Birmingham—Jefferson	Wilks, A. E.	Powderly—Jefferson
Walker, A. M.	Tuscaloosa—Tuscaloosa	Williams, G. H.	Mobile—Mobile
Walker, H. O.	Huntsville—Madison	Williams, G. N.	Linden—Marengo
Walker, H. S. J.	Mobile—Mobile	Williams, H. B.	Birmingham—Jefferson
Walker, J. E.	Opelika—Lee	Williams, James	Jacksonville—Calhoun
Walker, L. M.	Jasper—Walker	Williams, J. H.	Fairfield—Jefferson
Walker, Moody	Huntsville—Madison	Williams, J. R.	Selma—Dallas
Wallace, A. D.	Plantersville—Dallas	Williams, K. B.	Hartford—Geneva
Wallace, G. O.	Clayton—Barbour	Williams, S. J.	Livingston—Sumter
Wallace, S. H.	Birmingham—Jefferson	Williams, W. C.	Bridgeport—Jackson
Wallace, S. H., Jr.	Birmingham—Jefferson	Williams, W. J.	Nigeria, Africa—See Jefferson
Walls, J. J.	Alexander City—Talladega	Williamson, Byrn	Birmingham—Jefferson
Ward, H. S.	Birmingham—Jefferson	Williamson, E. O.	Gurley—Madison
Ward, J. K.	Birmingham—Jefferson	Williamson, George William	Bessemer—Jefferson
Ward, W. R.	Birmingham—Jefferson	Willis, C. A.	Montgomery—Montgomery
Warren, C. M.	Mobile—Mobile	Wilson, C. H.	Birmingham—Jefferson
Warren, P. H.	W. Blocton—Bibb	Wilson, Cunningham	Birmingham—Jefferson
Warren, T. A.	Auburn—Lee	Wilson, D. W.	Ft. Payne—DeKalb
Warren, W. E.	Mentone—See Jefferson	Wilson, F. C.	Birmingham—Jefferson
Warrick, G. W.	Birmingham—Jefferson	Wilson, J. D.	Birmingham—Jefferson
Warrick, W. D.	Birmingham—Jefferson	Wilson, J. L.	Hackleburg—Marion
Warwick, B. B.	Talladega—Talladega	Wilson, J. M.	Mobile—Mobile
Washam, Marvin	Talladega—Talladega	Wilson, J. W.	Tuscaloosa—Tuscaloosa
Waters, H. W.	Opp—Covington	Wilson, L. E.	Birmingham—Jefferson
Waters, H. W., Jr.	Montgomery—Montgomery	Wilson, O. E.	Birmingham—Jefferson
Watkins, H. S.	Coal Valley—Walker	Wilson, R. K.	Montgomery—Montgomery
Watkins, J. Harold	Montgomery—Montgomery	Wilson, W. E.	Russellville—Franklin
Watkins, M. A.	Birmingham—Jefferson	Wilson, W. K.	Haleyville—Winston
Watkins, M. L.	Glenwood—Crenshaw	Wimberly, G. B.	Reform—Pickens
Watson, Jerre	Anniston—Calhoun	Windham, L. A.	Luverne—Crenshaw
Watson, J. A.	Springville—St. Clair	Windham, S. W.	Dothan—Houston
Watson, R. H.	Georgiana, RFD—Butler	Winn, L. M.	Birmingham—Jefferson
Watterston, Charles	Birmingham—Jefferson	Winslow, R. C.	Sylacauga—Talladega
Watwood, J. A.	Arab—Marshall	Winsor, C. W.	Mobile—Mobile
Wear, T. R.	Hamilton—Marion	Winters, H. B.	Red Level—Covington
Weatherford, Z. L.	Red Bay—Franklin	Winters, H. H.	Tuskegee—Macon
Weatherly, G. I., Jr.	Ft. Payne—DeKalb	Wise, I. M.	Mobile—Mobile
Weathington, Lee	Guntersville—Marshall	Wishik, J. L.	Montgomery—Montgomery
Weaver, F. C.	Anniston—Calhoun	Wittmeier, J. L.	Cleveland—Blount
Weaver, J. A.	Birmingham—Jefferson	Wiygul, C. H.	Fairfield—Jefferson
Weaver, T. H.	Alexander, Va.—See Jefferson	Wood, A. A.	Mobile—Mobile
Webb, Virginia E.	Mobile—Mobile	Wood, F. R.	Heflin—Cleburne
Webster, H. N., Jr.	Mobile—Mobile	Wood, G. L.	Andalusia—Covington
Weidner, G. L.	Elba—Coffee	Wood, J. W.	Hanceville—Cullman
Weil, C. K.	Montgomery—Montgomery	Wood, W. G.	Lafayette—Chambers
Weinrib, Jos.	Montgomery—Montgomery	Woodall, P. S.	Birmingham—Jefferson
Weissinger, W. T.	Eutaw—Greene	Woodley, L. S. (S.)	Andalusia—Covington
Welch, O. W.	Fairfield—Jefferson	Woodruff, G. G.	Anniston—Calhoun
Weldon, H. S.	Lanett—Chambers	Woods, A. W.	Birmingham—Jefferson
Weldon, J. M.	Mobile—Mobile	Woods, T. B.	Dothan—Houston
West, O. T.	Fairfield—Jefferson	Woodson, L. G., Jr.	Birmingham—Jefferson
Westcott, W. B.	Montgomery—Montgomery	Woodson, R. C.	Birmingham—Jefferson
Wheeler, N. A.	Lafayette—Chambers		

Name	Town and County
Woolf, J. H.	Piedmont—Calhoun
Word, S. B.	Birmingham—Jefferson
Wren, E. B.	Talladega—Talladega
Wrenn, W. J.	Sumterville—Sumter
Wright, D. H.	Berry—Fayette
Wright, D. O.	Birmingham—Jefferson
Wright, L. R.	Heflin—Clebune
Wright, R. D.	Sheffield—Colbert
Wright, S. W.	Bessemer—Jefferson
Yancey, G. C.	Tuskegee—Macon

Name	Town and County
Yarbrough, J. F.	Montgomery—See Houston
Yeager, O. W.	Birmingham—Jefferson
Yeargan, R. L., Jr.	Evergreen—Conecuh
Yelton, C. L.	Ensley, Birmingham—Jefferson
Yemm, W. A.	Mobile—Mobile
Young, A. C.	Bessemer—Jefferson
Young, Ferrin	Floral—Covington
Zieman, A. H.	Mobile—Mobile
Zieman, J. A.	Mobile—Mobile
Zieman, S. A.	Mobile—Mobile

INDEX OF NON-MEMBERS 1947

Name	Town and County
Adair, R. T.	Montgomery—Montgomery
Adams, J. T.	Mobile—Mobile
Allen, A. R.	Ft. Mitchell, RFD—Russell
Armistead, S. D.	Robertsdale—Baldwin
Ballard, E. H.	Birmingham—Jefferson
Baugh, W. P.	Decatur—Morgan
Beard, R. S.	Huntsville—Madison
Bell, J. E.	Trafford, Rt. 1—Blount
Bell, W. H.	Dozier—Crenshaw
Belue, J. C.	Rogersville—Lauderdale
Berry, J. C.	Rt. 5, Birmingham—Jefferson
Black, J. H.	Montgomery—Montgomery
Blanton, Frank	Saragossa—Walker
Booth, W. M.	Hartselle—Morgan
Boswell, F. A.	Elmore—Elmore
Boyd, A. F.	Dothan—Houston
Boyd, L. M.	Waugh—Montgomery
Bradford, F. D.	Birmingham—Jefferson
Brewer, H. H.	Birmingham—Jefferson
Brooks, R. L.	Phoenix City, Rt. 2—Russell
Brothers, W. H.	Talladega—Talladega
Broughton, N. J.	Birmingham—Jefferson
Brown, W. L.	Birmingham—Jefferson
Bryant, H. C.	Birmingham—Jefferson
Burwell, E. S.	Birmingham—Jefferson
Busby, E. D.	Parrish, Rt. 1—Walker
Caffee, W. M.	Fairhope—Baldwin
Calhoun, S. J.	Langdale—Chambers
Campbell, V. O.	Billingsley—Autauga
Cantrell, W. T.	Mentone—DeKalb
Chenault, J. W.	Tuskegee Institute—Macon
Chisolm, J. S.	Selma—Dallas
Clements, M. D.	Birmingham—Jefferson
Cobb, W. F.	Frisco City—Monroe
Cochran, W. W.	Brilliant—Marion
Coffey, G. W.	Gadsden—Etowah
Coleman, H. N.	Ft. Deposit—Lowndes
Collins, F. A.	Beaverton—Lamar

Name	Town and County
Fields, E. T.	Ensley—Jefferson
Fleming, J. C.	Hartford—Geneva
Flippo, L. N.	Mobile—Mobile
Floyd, Ashby	Phoenix City—Russell
Foster, J. E.	Mobile—Mobile
Franklin, J. A.	Mobile—Mobile
Fussell, J. A.	New Brockton—Coffee
Garrett, J. D.	Montgomery—Montgomery
Gibbs, J. A.	Gainesville—Sumter
Giscombe, C. S.	Avondale—Jefferson
Gomez, C. J.	Union Springs—Bullock
Goode, E. B.	Mobile—Mobile
Graf, C. C.	Stevenville—Cullman
Gramling, A. B.	Attalla—Etowah
Gramling, J. W.	Gadsden—Etowah
Green, A. C.	Birmingham—Jefferson
Gumbs, O. S.	Mobile—Mobile
Haggard, D. C.	Sylvania—DeKalb
Hagler, P. L.	Birmingham—Jefferson
Hale, Prior	Vinemont, Rt. 2—Cullman
Ham, N. M.	Opp—Covington
Hancock, M. W.	Powhatan—Jefferson
Hankins, J. M.	Birmingham—Jefferson
Hanna, H. P.	Birmingham—Jefferson
Haralson, T. H.	Cusseta—Chambers
Harmon, J. S.	Elmore—Elmore
Harris, S. F.	Birmingham—Jefferson
Hausman, C. P.	Coaling—Tuscaloosa
Head, W. H.	Cullman—Cullman
Hicks, L. J.	Florence—Lauderdale
Hope, J. C., Jr.	Mobile—Mobile
Hudson, P. D.	Montgomery—Montgomery
Hudson, V. T.	Mobile—Mobile
Huey, B. M.	Ensley, Birmingham—Jefferson
Hunt, J. E.	Anniston—Calhoun
Hutchinson, J. E.	Birmingham—Jefferson

Innis, S. B. Troy—Pike

Dale, H. L.	Birmingham—Jefferson
Darden, J. W.	Opelika—Lee
Dasher, J. M.	Dothan—Houston
Dawkins, J. T.	Ensley—Jefferson
Demby, L. S.	Bessemer—Jefferson
Denny, T. H.	Wadley—Randolph
Dibble, E. H.	Tuskegee Institute—Macon
Dinkins, Pauline	Selma—Dallas
Donehoo, J. H.	Abernant—Tuscaloosa
Dowdy, R. W.	Opp, Rt. 3—Covington
Dozier, Byron	Birmingham—Jefferson
Drake, W. L.	Fairfield—Jefferson
Dwiggins, H. G.	Tuskegee—Macon

Jackson, F. D.	Anniston—Calhoun
Jeter, M. L.	Sylacauga—Talladega
Johnson, R. E.	Birmingham—Jefferson
Jones, E. H.	Talladega—Talladega
Jones, J. F.	Cuba—Sumter
Jones, T. W.	Loxley—Baldwin
Jones, W. A.	Sylacauga—Talladega
Kebe, G. B.	Mobile—Mobile
Kelly, J. P.	Talladega—Talladega
Killgore, J. J.	Wadley—Clay
Kincaid, J. L.	Bessemer—Jefferson

Elkourie, H. A.	Birmingham—Jefferson
Elliott, T. C.	Butler—Choctaw
Espy, Curtis	Midland City—Dale
Fields, A. C.	Ensley—Jefferson

Lane, L. T.	Prichard—Mobile
Lanford, W. B.	Columbia—Houston
Lee, E. F.	Gastonburg, Rt. 1—Marengo
Legare, J. K.	Forkland—Greene
Lilly, R. E.	Bessemer—Jefferson
Lindsey, E. A.	Opelika—Lee

Name	Town and County	Name	Town and County
Lister, R. H.	Ozark—Dale	Stacey, A. G.	Evergreen, Rt. 1—Monroe
Long, Henry	Florence—Lauderdale	Stanley, W. A.	Montgomery—Montgomery
Long, T. F.	Montgomery—Montgomery	Steele, F. E.	Opelika—Lee
Maclin, R. B.	Birmingham—Jefferson	Stephens, J. H.	Birmingham—Jefferson
Manasco, Titus	Carbon Hill—Walker	Stevens, T. A.	Mobile—Mobile
Marshall, W. S.	Mobile—Mobile	Stewart, J. W.	Gadsden—Etowah
Mason, F. H.	Brewton—Escambia	Stringer, M. S.	Florence—Lauderdale
Matthews, H. O.	Bessemer—Jefferson	Stutts, H. L.	St. Joseph, Tenn., Rt. 1—S●● Lauderdale
May, F. H.	Birmingham—Jefferson	Swan, L. F.	Birmingham—Jefferson
Mayfield, S. F.	Tuscaloosa—Tuscaloosa	Swann, J. C.	Wedowee—Randolph
McCall, M. G.	Birmingham—Jefferson	Tapia, M. H.	Bayou La Batre—Mobile
McCay, T. C.	Pinson—Jefferson	Taylor, J. F.	Mobile—Mobile
McClurkin, W. N.	McWilliams, Rt. 1—Wilcox	Taylor, J. W.	Lexington—Lauderdale
McCoo, T. V.	Eufaula—Barbour	Teaford, B. J.	Fairhope—Baldwin
McKenzie, A. B.	Tuscaloosa—Tuscaloosa	Thetford, S. L.	Boligee—Greene
McKinley, C. F.	Atmore—Escambia	Thompson, Charleton	Tuskegee—Macon
McLean, J. N.	Snowdoun—Montgomery	Tippin, P. H. M.	Brewton—Escambia
McPherson, C. A. J.	Birmingham—Jefferson	Tisdale, R. E.	Montgomery—Montgomery
Meharg, R. L.	Alexandria—Calhoun	Todd, R. W.	Phoenix City—Russell
Merritt, T. E.	Flattop—Jefferson	Towns, J. B.	Gadsden—Etowah
Miller, I. S.	Mobile—Mobile	Townsend, A. L.	Hartford—Geneva
Minderhout, W. J.	Ensley, Birmingham—Jefferson	Trammell, Virgil	Rt. 6, Birmingham—Jefferson
Mitchell, A. S.	Birmingham—Jefferson	Ussery, C. J.	Ensley, Birmingham—Jefferson
Moore, G. A.	Eutaw—Greene	Van De Voort, Horace	Bessemer—Jefferson
Moten, P. S.	Birmingham—Jefferson	Vandiver, H. G.	Princeton—Jackson
Newman, J. H.	Birmingham—Jefferson	Van Iderstine, R.	Daphne—Baldwin
Nutter, R. A.	Demopolis—Marengo	Vinson, N. H.	Falkville—Morgan
Oden, G. E.	Mobile—Mobile	Walker, N. D.	Selma—Dallas
Odum, E. T.	Mobile—Mobile	Walwyn, C. A.	Tuskegee Institute—Macon
Overton, J. W.	Mobile—Mobile	Washington, Wm.	Montgomery—Montgomery
Owen, H. G.	Rt. 2, Quinton—Walker	White, C. P.	Labuco—Jefferson
Palmer, C. R.	Sheffield—Colbert	White, Meredith	Mobile—Mobile
Patterson, R. R.	Birmingham—Jefferson	Whorton, W. W.	Pratt City—Jefferson
Patton, M. K.	Selma—Dallas	Wilborn, Don	Montgomery—Montgomery
Peavy, J. F., Jr.	Atmore—Escambia	Wiley, J. B.	Decatur—Morgan
Peters, R. H.	Mobile—Mobile	Wilkerson, G. H.	Mobile—Mobile
Pettus, W. D.	Montgomery—Montgomery	Wilkerson, L. B.	Shorter—Macon
Peyton, W. H.	Athens—Limestone	Williams, J. W.	Tuskegee—Macon
Phillippi, F. M., Jr.	Brewton—Escambia	Winn, J. T.	Baileytown—Cullman
Pipes, J. L.	Goodwater—Coosa	Woodall, P. H.	Birmingham—Jefferson
Plump, A. W.	Birmingham—Jefferson	Wynn, A. L.	Montgomery—Montgomery
Porter, D. W.	Birmingham—Jefferson	Young, J. D.	Fayette—Fayette
Porter, Mae E.	Pell City—St. Clair	Young, T. H.	Birmingham—Jefferson
Ragsdale, M. C.	Bessemer—Jefferson	Zimmerman, A. S.	Prattville, Rt. 3—Auatuga
Reneke, E. J.	Elberta—Baldwin		
Robertson, J. K.	Ensley, Birmingham—Jefferson		
Rodgers, G. A.	Anniston—Calhoun		
Ross, F. F.	Montgomery—Montgomery		
Rousseau, W. R.	Rogersville—Lauderdale		
Ruffin, W. L.	Sheffield—Colbert		
Ryalls, W. M.	Ashford—Houston		
Schrader, M. A.	E. Tallassee—Tallapoosa		
Scott, Walter	Headland—Henry		
Shepherd, S. T.	Birmingham—Jefferson		
Simpson, F. S.	Ensley, Birmingham—Jefferson		
Sims, Thomas	Fairfield—Jefferson		
Smothers, R. E. L.	Northport—Tuscaloosa		
Snoddy, E. A.	Aliceville—Pickens		
Springer, H. C.	Bessemer—Jefferson		

ADDRESSES UNKNOWN

Name	Last Address
Barr, Edward	Birmingham
Davis, Julian Walker	Birmingham
McCrary, D. W.	Town Creek
McCullar, J. A.	Russellville
Smith, J. G.	Birmingham
Smith, V. D.	Birmingham
Stewart, R. T.	Acmar
Watson, W. A.	Rt. 7, Birmingham

1948 SESSION
OF THE
ASSOCIATION
MOBILE
APRIL 15, 16, 17

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

August 1947

No. 2

THE MANAGEMENT OF HYPERTENSION WITH PARTICULAR REFERENCE TO THE SURGICAL TREATMENT

ALBERT WEINSTEIN, M. D.

Nashville, Tennessee

The care of the patient with hypertension is an obligation faced almost every day by one engaged in the practice of medicine. It is accordingly a necessity that due regard be given this difficult problem. If one approaches this complication without proper orientation in the mechanism of its production, without due understanding of what has been attempted and accomplished in the past, and without a proper critique of therapeutic methods, then his path will be rugged and his goal never attained.

Today, although we are to discuss primarily the role of sympathectomy in the treatment of hypertension, I do feel that a few brief comments relative to the general problem of hypertension should be restated here.¹

Shortly after the beginning of the twentieth century, clinical methods became available for the accurate measurement of the systemic blood pressure. Following this, the determination of the blood pressure became a matter of routine and, consequently, there arose many questions which could not be readily answered. The decision as to what constituted the normal range of blood pressure was not easily reached and even now the current literature contains large statistical surveys which attempt to

fix the normal range for the systolic and diastolic blood pressures. The question of prognosis was not clear and now, after years of following patients with hypertension, it is hazardous to make predictions, favorable or unfavorable, as to their future. The complications of hypertension were rapidly crystallized. With an elevated blood pressure a patient was liable to accidents of the vascular bed; such as cerebral apoplexy, left ventricular heart failure and uremia. The etiology of hypertension was uncertain. It was noted that there was a definite tendency for the disease to appear with unusual frequency among members of certain families, and it was more commonly noted among the obese than those of normal or subnormal weight. Although originally considered to be a disease related to primary renal disease, it was rapidly found that less than five per cent of all the patients with hypertension had renal disease; such as, glomerulonephritis, urinary tract obstruction, polycystic kidneys, pyelonephritis and aberrant arterial supply to the kidney. The elevation of blood pressure seemed to be influenced to a very striking degree by emotional stress and to be relieved by physical and emotional rest. Elevation of blood pressure was noted in association with coarctation of the aorta, sometimes with unilateral kidney disease, occasionally with brain tumors, and frequently in association with various endocrine disorders; such as, basophilic tumors of the pituitary, tumors of the adrenals, and less often in association

1. Weinstein, Albert: The Problem of Hypertension, *American Practitioner*, 1: 95-100 (October) 1946.

From the Department of Medicine, Vanderbilt University School of Medicine. Read before the Association in annual session, Birmingham, April 15, 1947.

with certain ovarian tumors, such as arrhenoblastoma. As more and more experience was gained with the sphygmometer, it soon became clear that in the great majority of the cases of elevation of the systolic and diastolic blood pressure, no real explanation as to etiology was forthcoming. These cases, and they constitute the bulk of all patients with hypertension, were classified as essential, or primary, hypertension—that is, hypertension existing in an individual with no detectable etiology. Finally, it was noted that extreme hypertension might be found with no demonstrable peripheral arteriosclerosis, and it was also true that there were some instances where arteriosclerosis, especially of the renal arteries, seemed to be of such a degree as to limit renal circulation and produce an elevation of blood pressure.

Perhaps the greatest recent contribution to our understanding of the mechanism of the production of hypertension was the demonstration by Goldblatt² and his collaborators in 1934 that renal ischemia in dogs, produced by application of clamps to the renal arteries, results in a condition very comparable to essential hypertension in man. This was indeed an important contribution since previous experimental methods for producing hypertension did not produce a comparable picture to that seen clinically in essential hypertension. Some of these methods were alteration of spinal fluid dynamics by injection of kaolin intracisternally, the cutting of the carotid sinus and aortic depressor nerves, and various procedures mechanically destructive to the kidney.

In 1898, Tigerstedt and Berman³ demonstrated the pressor effect of crude extracts of kidney tissue and suggested that a substance, to which they gave the name of renin, was elaborated by the diseased kidney and was responsible for the production of hypertension in association with kidney disease. In 1936, Harrison, Blalock and Ma-

son⁴ revived interest in this substance and later Page⁵ in Indianapolis and Houssay⁶ in Buenos Aires demonstrated that this substance lost its pressor power following purification and regained it when mixed with a globulin-containing fraction of blood serum.

It is now generally believed that renal ischemia results in the production of a pressor substance which causes varying degrees of general arteriolar constriction. This pressor substance, known as angiotonin, or hypertensin, is the result of a chemical reaction between renin, produced in the kidney, and an enzyme in the blood plasma. Evidence at hand suggests that in certain kidney extracts, intestinal mucosa, and muscle tissue, there may exist a substance capable of neutralizing the pressor factor. The therapeutic possibilities are immediately evident.

Before going into details as to the various forms of treatment available for the hypertensive state, there are certain fundamental facts that need restating. In the first place, as was well demonstrated by Ayman⁷ in 1930, no form of treatment of hypertension can be properly evaluated until it is clearly recognized that the elevation of blood pressure is based on a very unstable mechanism ordinarily. He showed very definitely that the blood pressure might fall as much when the patient took a few drops of hydrochloric acid, or some other placebo, as when he was given more complex and more widely heralded therapeutic products. In addition, it should be recognized that the discovery of hypertension is not a death sentence, but that elevation of blood pressure is compatible with a normal span of years and, with slight restrictions, years of comfortable living. Indeed, barring the accidents mentioned above, particularly that of left ventricular

2. Goldblatt, H.; Lunch, J.; Hanzal, R. F., and Summerville, W. W.: Studies on Experimental Hypertension; Production of Persistent Elevation of Systolic Blood Pressure by Means of Renal Ischemia, *J. Exper. Med.* 59: 347-379 (March) 1934.

3. Tigerstedt, R., and Bergman, P. G.: Niere und Kreislauf, *Skandinav. Arch. f. Physiol.* 8: 223-271, 1898.

4. Harrison, T. R.; Blalock, A., and Mason, M. F.: Effects on Blood Pressure of Injection of Kidney Extracts of Dogs with Renal Hypertension, *Proc. Soc. Exper. Biol. & Med.* 35: 38-40 (October) 1936.

5. Page, I.: On the Nature of the Pressor Action of Renin, *J. Exper. Med.* 70: 521-542 (November) 1939.

6. Houssay, B. A., and Braun-Menendez, E.: Renin in Experimental Hypertension, *Brit. M. J.* 2: 179-181 (August 15) 1942.

7. Ayman, D.: Evaluation of Therapeutic Results in Essential Hypertension: Interpretation of Symptomatic Relief, *J. A. M. A.* 95: 246-249 (July) 1930.

heart failure, the hypertensive patient can usually be expected to survive at least the calculated average years of man—namely, about 65.

Therefore, there should not be too much despair. Furthermore, Atchley,⁸ in a recent review of the symptomatology of patients admitted to the Presbyterian Hospital in New York, found the incidence of headache, vertigo, weakness, palpitation, spots before the eyes, and similar symptoms no more frequent in patients with hypertension than in those with normal, or low blood pressure. I believe it is a common error in practice to seize upon a disclosed hypertension as the explanation for all symptoms appearing in the individual under examination. This laxity of thinking is similarly observed in accrediting undeserved responsibility to the menopause, for all symptoms occurring in women past the age of 35, or to diabetes for the many nondiabetic diseases appearing in individuals with this metabolic handicap. I do not believe we can condemn this reasoning too severely. However, I feel that it is a good rule to say automatically to oneself, "These symptoms have another explanation than the hypertension, the menopause, or the diabetes, which I realize exists." Further emphasis may be added by the fact that in a series of 15,000 patients over 40 years of age studied by Master, Marks and Dack,⁹ 41 per cent of the men and 51 per cent of the women had blood pressure determinations of 150/90 or higher. Therefore, almost every other patient in this age group will have hypertension regardless of what other disease entity may be present.

It is now generally held that the systolic blood pressure rises gradually from a level of 90 to 115 millimeters of mercury between the ages of three to sixteen years, to a level of 150 systolic and 90 diastolic at 40 years. Above the age of 40, a systolic pressure of 150 and a diastolic level of 90 millimeters of mercury may be normal. The diastolic level is recorded when all sounds disappear.

The treatment of the complications of hypertension is to be mentioned simply for

completion of thought. The failure of the heart, the development of apoplexy, coronary thrombosis (although a normal blood pressure is indeed no insurance against the occurrence of this disorder), or the progression of the essential hypertension to a malignant phase are matters of common experience. It is well to emphasize that the feature of hypertensive encephalopathy, as stressed by Fishberg,¹⁰ should always be in one's mind before a too pessimistic opinion is given in regard to a hypertensive individual who has had a hemiplegia, a convulsion, or an episode of unconsciousness. It is common that after proper sedation the individual may arouse and be perfectly free of all evidences of the observed impairment.

Arteriosclerosis may properly be considered a complication of hypertension. Fishberg found arteriosclerosis of the pulmonary arterial system in association with conditions causing hypertension in this part of the circulation, while the arteries of the general circulation were normal. On the other hand, there are examples recorded repeatedly where arteriosclerosis of major renal vessels had created a situation comparable to the Goldblatt clamp experiment with the hypertension developing as a consequence. Finally, it is often that one is unable to state whether the hypertension, or the arteriosclerosis, was the primary factor.

One of the most important by-products of the studies by Smithwick¹¹ was the observation made on kidney tissue removed by biopsy during the thoraco-lumbar sympathectomy. More than 1,000 kidneys were studied in gross and a great majority of these had biopsy specimens removed. Although all of these patients had hypertension, it was rare to find gross evidence of scarring or contraction of the kidneys and, on histologic study, 28 per cent of the biopsies showed no renal disease, and an additional 25 per cent merely mild changes. Therefore, more than half of the patients had no morphologic evidence in the kidney to explain the hypertension. This is in striking contrast to the study

8. Atchley, D. W.: Medical Treatment of Uncomplicated Hypertensive Vascular Disease, New York State J. Med. 44: 2683-2686 (December 15) 1944.

9. Master, A. M.; Marks, H. H., and Dack, S.: Hypertension in People over Forty, J. A. M. A. 121: 1251-1256 (April 17) 1943.

10. Fishberg, A. M.: Hypertension and Nephritis, ed. 4, Philadelphia, Lea & Febiger, 1939.

11. Smithwick, R. H.: Technique for Splanchnic Resection for Hypertension; Preliminary Report, Surgery 7: 1-8 (January) 1940.

by Moritz and Oldt¹² who noted invariably the presence of renal arteriolar sclerosis in patients dying with hypertension.

It is evident, therefore, that although renal vascular disease may be noted as an end result of hypertension, it is not the sole cause and from the observations by Smithwick the important factor may be vasoconstriction mediated through the sympathetic nervous system and initiated by some, perhaps as yet unknown, humoral or chemical mechanism.

The various drugs and plans used in the treatment of hypertension will not be entered into today. A fair summary, I believe, is the realization that at the present no single medication has proved its value after careful trial. As yet still worthy of investigation are the low sodium diets which have been emphasized by Grollman and Kempner¹³ in particular. Kempner believes his "rice diet" offers, in addition to a low sodium content, a relief to the metabolic functions of the kidney, impairment of which is reflected in part by the development of hypertension.

As an internist I have watched for years the publication of certain surgical procedures for the relief of hypertension, with the hope of obtaining some helpful information, inasmuch as I did not feel that I was being successful in the various plans I had been employing. I persuaded Dr. Pilcher in 1944 to renew his interest in this problem.

We familiarized ourselves with the methods of case selection advised by others. Our intention was to obtain individuals under the age of 50 years with hypertension not complicated by renal or cardiac disease who had not done well on good medical care. This type of patient was hospitalized and, in addition to the general medical and laboratory examination, certain specific observations were carried out. Chest x-rays, intravenous pyelograms, excretory tests of kidney function; electrocardiogram and evaluation of the functional capacity of the circulation by vital capacity, circulation time and venous pressure study were carried out.

12. Moritz, S. R., and Oldt, M. R.: Arteriolar Sclerosis in Hypertensive and Nonhypertensive Individuals, *Am. J. Path.* 13: 679-728 (September) 1937.

13. Kempner, W.: Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet, *North Carolina M. J.* 5: 125-133 (April); 273-274 (July) 1944.

Then the course of the blood pressure following narcosis with sodium amytal was investigated. The responsiveness of the arterioles was looked into with the cold pressor test, and observations of the blood pressure in the recumbent, sitting and standing positions were made. We have not used, in selection of cases, tests employed by others, such as, high spinal block, the injection of tetraethyl ammonium chloride; nor have we used breath holding or ammonium inhalation to determine the pressor level or hyperventilation with carotid sinus pressure to determine the depressor level. These latter tests are thought by some to differentiate between hypertension of the humoral type and the neurogenic (vasomotor) variety.

We hoped to find a group of patients who gave indications of having an uncomplicated hypertension and a vascular bed in a responsive state. We soon found that our method of selection could not be rule-fast. A patient's blood pressure might fall under sodium amytal narcosis at one test period, and then remain unaltered at another trial, even though relaxation was apparently complete on both occasions. It was also apparent that there were instances where cardiac and renal impairment existed, but of so slight a degree that it did not exclude the patient from the procedure. There were individuals with intolerable headaches, rapidly becoming narcotic addicts, who seemed to be good candidates even though other features of the examination might be judged to be prohibitive.

As we continued to work with this problem, I became impressed with the surgeon's dexterity and the relative lack of postoperative complications. This made me bolder in my selection of cases.

We are reporting today 47 patients on whom Dr. Pilcher has done a supra and infradiaphragmatic sympathectomy in two stages. I have personally cared for 29 of this group. We make no attempt to draw conclusions from the statistical analysis of our results. They are presented with the idea of having an open discussion with you as to the desirability of this procedure.

From the viewpoint of an internist it is impressive that there were no operative fatalities, that there was only one major complication; namely, empyema, which occurred in 3 patients. The appearance of pain in the

back in the region of the operative procedure and abdominal distension were commonly encountered. Usually the abdominal distension ceased to annoy the patient after 1-2 months, the pain disappeared in 4-6 months. It is interesting that the uncomplaining, cooperative patient had little difficulty with these symptoms. The tense, emotional, hyperkinetic type complains here as they do of procedures generally. Relief from headache is truly remarkable. Individuals who have been persecuted for years with pounding headaches have been completely and gratifyingly relieved. Although the procedure is an extensive one, as Dr. Pilcher will demonstrate, I believe the results obtained in the cure of hypertensive headaches justify the operation for this type of case. We have seen the blood pressure return to normal in only 6 of the 47 patients. This has been disappointing. Circulatory efficiency has been measurably improved. No striking changes have been noted in renal efficiency. Libido and potentia are reduced somewhat; spermatogenesis has not been followed.

There is one complication that cannot be measured and yet it is evident; namely, the slow return of the ability to meet the demands of living. The younger individuals below 40 are not particularly disturbed, but patients near 50 years feel incompetent, subject to fatigue, and are moderately depressed for several months.

What then should be our decision? It is hard to be definite in conclusions but there is justification for generalizations. No patient should be subjected to a surgical procedure for the treatment of hypertension until the course and progress of the hypertension has been observed for at least many months. During this period of time most any plan of treatment may be employed, provided the exact level of the blood pressure is withheld from the patient and reassurance given at each consultation. If the course of the disease suggests that the patient is being harmed unduly by the hypertension, then surgery is to be recommended. In making the decision as to when to operate it is well to remember the publications of Peet and Isberg¹⁴ who noted that only

33 per cent of their patients with preoperative evidence of changes in the heart, brain, or kidneys survived the operation for a period as long as 5 years. In contrast, in the group with no preoperative changes in these viscera 95 per cent were alive 11 years post-operatively.

If headache exists to the degree of being a therapeutic problem, supradiaphragmatic sympathectomy is indicated.

Finally, we must constantly bear in mind a wholesome circumspect attitude toward the patient with hypertension; less drama should be employed in taking the blood pressure and we should minimize its exact level. We must always insist on a relaxed approach to daily problems. If these precepts are observed then the doctor becomes a friend and confidant and these features add the fine and often neglected art, to the science, of the practice of our profession.

Intestinal Obstruction—Surgery, well timed and well executed, forms the backbone of successful management in the great majority of cases of acute intestinal obstruction. Every case must be individualized. In most instances the level of obstruction may be estimated with some degree of accuracy from clinical signs and roentgenograms of the abdomen. Certain preoperative planning of the surgical attack can then be made. Simplicity and asepsis are important features of surgical management in intestinal obstructions. To decompress the bowel with practically complete lack of spilling in a simple manner has great merit. If further procedures, i. e. resections, freeing of adhesions, are attempted to completely cure the patient, the results may be disastrous. Even exploration of the abdomen in the presence of distended loops of bowel greatly increases the risk of operation.

Acute large bowel obstructions respond poorly to conservative management, particularly if relief is not obtained from that form of treatment within twelve hours. In small bowel obstructions the period of trial with conservative therapy may be extended to 48 to 72 hours, if no signs of intraperitoneal irritation exist. Strangulating lesions of the intestine must be recognized early and dealt with surgically without delay.

It would appear, therefore, that the acute high grade intestinal obstruction requires early surgical intervention unless dramatic results are seen from conservative measures within 48 to 72 hours. Furthermore, in simple small bowel obstructive processes, a simple procedure, i. e., Witzel enterostomy, to de-compress the proximal distended bowel as close to the obstructing process as possible, without undue exploration of the abdomen, is the treatment of choice.—*Dixon and Weismann, Arizona Medicine, May '47.*

14. Peet, M. M., and Isberg, E. M.: The Surgical Treatment of Arterial Hypertension, J. A. M. A. 130: 467 (February 23) 1946.

THE SURGICAL TREATMENT OF ESSENTIAL HYPERTENSION

COBB PILCHER, M. D.

Nashville, Tennessee

The cause, the mechanism and the treatment of essential hypertension has been a subject of interest, of speculation and of research for many, many years. Although progress has been made and a vast amount of subsidiary knowledge accumulated, it must be admitted frankly that the true nature of hypertension is unknown and that any treatment directed toward alleviation of the cause has proven to have little or no value. Conservative therapy utilized in the past has included prolonged rest, an attempt to eliminate emotional factors, and the use of various drugs whose high initial promise has failed to be substantiated by prolonged and critical use.

Because of the inadequacy of conservative treatment, the surgeon has devised a number of procedures directed not against the basic underlying cause but against the physical mechanism which constitutes a part of essential hypertension; namely, the resistance of spastic blood vessels.

Many years ago, Crile¹ removed the celiac ganglion in a number of patients who suffered from essential hypertension, and subsequently Adson and Craig² devised the subdiaphragmatic operation of celiac ganglionectomy, splanchnicectomy and partial resection of the adrenal glands. Later, Peet³ devised the supradiaphragmatic operation of bilateral splanchnicectomy which included removal of the lower thoracic ganglia and the greater and lesser splanchnic nerves above the diaphragm.

All of these procedures were beneficial in a number of cases but failed to relieve a number of others. Peet's very excellent results in a high percentage of cases have not

been repeated at the hands of a number of other surgeons.

In 1940, Smithwick⁴ devised the thoracolumbar sympathectomy which is now in wide use by many surgeons and which has been conclusively shown to produce beneficial effects in a large proportion of cases. Even this procedure, however, has not proven universally effective and a number of investigators have more recently advocated still more extensive and radical ablations of the sympathetic nervous system. The operations of Grimson,⁵ and Hinton and Lord⁶ have been of this radical nature but it is yet too early to be certain whether they are superior to the Smithwick procedure.

There is still widespread disagreement regarding the value of the operative treatment in the first place and the type of operation which is preferable in the second. The reasons for this disagreement are fairly obvious: first, any form of operative treatment so far devised is directed entirely toward the palliative relaxation of a large portion of the vascular bed and its results must therefore vary with the problems of the individual case, particularly as regards the reversibility of vascular changes which may have occurred, of renal damage which may exist, and of cardiac and cerebral complications which may have arisen. Secondly, some of the operations which have been advocated failed to take into account the essential difference between postganglionic and preganglionic sympathectomy which has so great a bearing upon the ultimate outcome. Thirdly, the criteria for selection of cases for operation varies so greatly in different clinics that results are not uniformly comparable. Fourthly, evaluation of results, even by the most honest individual, is ex-

From the Department of Surgery, Vanderbilt University School of Medicine. Read before the Association in annual session, Birmingham, April 15, 1947.

1. Crile, G.: *The Surgical Treatment of Hypertension*, W. B. Saunders Co., Philadelphia, 1938.

2. Craig, W. M., and Adson, A. W.: *Hypertension and Subdiaphragmatic Sympathetic Denervation*, Surg. Clin. N. America 19: 969, 1939.

3. Peet, M. M.: *Splanchnic Section for Hypertension. A Preliminary Report*, Univ. Hosp. Bull. 1: 17, 1935.

4. Smithwick, R. H.: *A Technique for Splanchnic Resection for Hypertension. Preliminary Report*, Surg. 7: 1, 1940.

5. Grimson, K. S.: *Total Thoracic and Partial to Total Lumbar Sympathectomy and Celiac Ganglionectomy in Treatment of Hypertension*, Ann. Surg. 114: 753, 1941.

6. Hinton, J. W., and Lord, J. W.: *Operative Technique of Thoracolumbar Sympathectomy*, Surg., Gyn. and Obst. 83: 643, 1946.

traordinarily difficult and nearly all published series of results are subject to serious criticisms by the discerning reader.

Experience with the operative treatment of hypertension offers a ready explanation for these difficulties. A patient who does not get a significant lowering of blood pressure from the operative treatment may nevertheless be so completely relieved of severe and disabling headache and dizziness that he considers the operation to have been miraculously successful. Another patient may get so great a lowering of blood pressure with such severe postural hypotension that for a prolonged period he is more disabled by the beneficial results of operation than he was beforehand.

Despite these difficulties in arriving at sound conclusions regarding the matter, our experience with the operative treatment of hypertension has been sufficiently satisfactory to justify us in continuing it and it has seemed wise to present to this Association our attitude regarding the selection of cases for operation, the type of operation which is preferable, and a preliminary survey of the results which we have obtained to date.

SELECTION OF CASES

It is our policy to insist that all potential candidates for thoraco-lumbar sympathectomy undergo a period of observation and study in the hospital before a final decision is reached. Routine studies, in addition to careful history and physical examination, include the sodium amytal test, the cold pressor test, the Fishberg renal concentration test, electrocardiogram, x-ray of the heart and lungs, intravenous pyelogram, and, in many instances, spinal fluid studies.

It must be admitted, however, that none of these observations gives us a sound basis for accurate prediction of the results of operation. The sodium amytal and cold pressor tests are indicators of the lability of the vasomotor mechanism and to some extent of the degree of vasospastic element which enters into the patient's hypertension. On the other hand, it is unfortunately true that patients who have seemingly satisfactory responses to these tests do not invariably get a satisfactory lowering of blood pressure following operation. The state of the patient's kidneys, heart and cerebral and retinal blood vessels is of major importance but

some of our most satisfactory results have been obtained in patients who have shown advanced changes in one or more of these organs.

In the final analysis, the decision must rest upon the considered judgment of the surgeon and his medical consultant based upon the overall evaluation of the individual case rather than upon any arbitrary criteria which may be set up. No generalization is invariably correct but the following factors are helpful in consideration of the individual case:

1. There must be conclusive evidence based on long observation by a competent observer that the patient's hypertension is not transitory but is progressive and permanent.

2. Any evidence of renal, cardiac or cerebral complication must indicate that these disorders are not sufficiently severe to constitute a major increase in the risk of the operation itself or an indication of progressive disease which will not be altered by a lowering of the blood pressure.

3. In another category of patients, operation is justifiable and indicated for the relief of intolerable headache, dizziness, or visual disturbance even in the presence of irreversible changes in blood vessels, kidney or heart. The basis of this criterion lies in the almost universal symptomatic relief obtained by patients following sympathectomy even in the absence of beneficial effects upon the blood pressure.

THE OPERATIVE PROCEDURE

We employ a slight modification of the Smithwick thoraco-lumbar sympathectomy. This procedure, which is both supradiaphragmatic and infradiaphragmatic, involves the removal of the sympathetic ganglionic chain from the eighth dorsal ganglion down to and including the second lumbar and occasionally the third lumbar ganglion. The greater splanchnic nerve and its anatomically variable accessories, the lesser and least splanchnic nerves, are also removed down to the celiac ganglion. The celiac ganglion is never removed because its destruction constitutes a postganglionic sympathectomy which, by producing a sensitivity to adrenalin and sympathin, actually defeats the purpose of the operation. In the original Smithwick operation, the crus

of the diaphragm is divided in order to follow the sympathetic chain from above down to the lumbar ganglia. We have found it possible and advisable to leave the crus of the diaphragm intact and to pull the chain through from above downward. This is quite easily done and it relieves the surgeon of the necessity of arduous repair of the diaphragm and the patient from much of the diaphragmatic pain in the shoulder which adds to the postoperative discomfort.

POSTOPERATIVE SIDE-EFFECTS

Bilateral thoraco-lumbar sympathectomy constitutes two major operative procedures with all of the discomfort and disability implied thereby. In addition, there are three effects that are peculiar to this particular procedure.

The operative exposure necessitates removal of the twelfth rib and a portion of the eleventh rib and of their intercostal nerves. Most patients have a greater or lesser degree of postoperative intercostal neuralgia, presumably arising from the stumps of the eleventh and twelfth intercostal nerves. This varies from mild discomfort for a day or two to rather severe and annoying paresthesias which may last for weeks or occasionally for several months. It invariably disappears in the end and is never a debilitating pain but it does constitute an annoying postoperative symptom.

Most patients have a rather severe degree of postural hypotension which lasts for weeks or months. This constitutes weakness, dizziness or even syncope when the patient first stands in the erect position. It is due to dilatation of the vascular beds of the splanchnic area and the lower extremities with resultant transitory cerebral ischemia. It is not unusual for a patient's blood pressure, which has been reduced to 140/95 in the supine position, to fall suddenly to a systolic pressure of 60 when he first stands up. With the passage of time, vasomotor adjustment takes place and the blood pressure is likely eventually to become stabilized at a level which will not produce cerebral anoxia. In the meantime, this postural change is combatted by the wearing of a tight girdle and occasionally of elastic stockings.

The patient who has had a markedly elevated blood pressure for a long period of time

requires considerable general systemic adjustment to a much lower level of pressure which we hope to produce by sympathectomy. The general feeling of well being, the patient's mood and indeed his entire constitution may suffer from a "let-down" when the blood pressure is lowered. Thus the patients who get the best possible ultimate result may feel worse after operation and require the longest period of readjustment before returning to a satisfactory way of living and program of activity. It is our custom to warn patients that they must give up six months of their lives to this period of readjustment in order to gain years of living if a satisfactory result is obtained.

POSTOPERATIVE RESULTS

Our attitude toward the operative treatment of hypertension has been an essentially conservative one. In the past, we have tried several of the operative procedures in small series of cases and given them up because of unsatisfactory results. Only in the past few years have we felt that thoracolumbar sympathectomy offered sufficiently satisfactory results to justify its continued use. For this reason, we are unable to present long-term follow-up results which justify final conclusions. It has seemed advisable, however, to assemble the available facts regarding a small series of 47 cases, all of whom have been operated upon within the past three years.

Evaluation of results, particularly as regards blood pressure, is extraordinarily difficult. Undue enthusiasm might lead one to reach entirely false conclusions regarding such results. For example, if conclusions were based upon the highest recorded blood pressure before operation and the lowest recorded blood pressure after operation, every patient would be thought to have obtained a virtually perfect result since there is always a postoperative period of low blood pressure. After seeing these pitfalls in the papers of others, we have based our tabulations upon the patient's preoperative blood pressure when resting in bed and upon the most recent three recordings of the postoperative blood pressure when the patient was lying down or, in a few instances, sitting up. This evaluation has completely omitted the immediate postoperative hypotension and has not taken advantage of the postural reduction in pressure which some of the

more recent cases still show when standing up. If there is any inequity in our tabulations, it is against rather than in favor of the results of operation.

Age. With the exception of eight cases, all patients have been under fifty years of age, as shown in the accompanying tables. It has been a striking fact that the best results have been obtained in young people. When irreversible arterial changes have occurred in the older group, the results cannot be expected to be as good.

TABLE 1
SYMPATHECTOMY FOR HYPERTENSION

Total Cases—47		
Age		Sex
10-20 years	4	
20-30 years	1	Male 20
30-40 years	11	Female 27
40-50 years	23	
50-55 years	8	

Sex. Twenty patients were male and twenty-seven were female.

Subjective Symptoms. The most significant postoperative result was the almost universal relief of the severe headaches suffered by thirty-four of the forty-seven patients. Of these cases, twenty-seven obtained complete relief of headache and seven patients complain only of mild and occasional headache. No patient failed to obtain a considerable degree of relief. Similarly, dizziness was relieved entirely in seventeen of nineteen patients and to a considerable degree in two others. Visual disturbances (scotomata, blurring of vision, papilledema, etc.) were relieved in twelve of fourteen cases, improved in one, and no change was observed in the final case (who already had optic atrophy in one eye from papilledema).

Nine patients had suffered mild cerebrovascular attacks of vasospastic type. In eight of these cases, no postoperative recurrence has occurred to date. One patient who had a thrombosis of the posterior-inferior cerebellar artery has had a very mild recurrence on a single occasion.

Blood Pressure. The alterations in blood pressure are shown in the accompanying tables. When considered as a group, the trend toward reduction of pressure to a substantial degree has been quite marked. Whereas thirty-eight patients began with

a systolic pressure above 200 mm., only eight patients have such a level in the postoperative period. Similarly, the diastolic pressure which was over 130 mm, in thirty-one patients before operation remains at such a high level in only twelve patients postoperatively and is below 110 mm. in twenty-three patients.*

TABLE 2
SYMPATHECTOMY FOR HYPERTENSION
SYMPTOMS

Preoperative		Postoperative Relief		
		Complete	Marked	None
Headache	34	27	7	0
Dizziness	19	17	2	0
Visual Symptoms	14	12	1	1
Cerebral Vascular Episodes	9	*8		

* (1 slight recurrence)

Similarly, when results in individual cases are tabulated on the basis of reduction in pressure in the individual, we find a reduction in systolic blood pressure of more than 50 mm. in twenty patients and of more than 25 mm. in an additional fourteen patients. More significantly, the diastolic pressure has been reduced more than 50 mm. in nine patients and more than 25 mm. in thirteen additional cases.

TABLE 3
SYMPATHECTOMY FOR HYPERTENSION
BLOOD PRESSURE

Preoperative		Postoperative	
Systolic		Lying	Standing
Over 250 mm.	5	1	1
200-250 mm.	33	7	5
180-200 mm.	7	10	5
150-180 mm.	2*	17	11
Under 150 mm.	0	8	11
Diastolic			
Over 150 mm.	13	4	1
130-150 mm.	18	8	6
110-130 mm.	14	8	7
90-110 mm.	2*	20	13
Under 90 mm.	0	3	4

*Both children

Several additional bright points regarding the procedure might be mentioned. For

*Discrepancies in the totals of postoperative observations in the standing position result from the fact that some observations in this position are not recorded.

TABLE 4
SYMPATHECTOMY FOR HYPERTENSION
POSTOPERATIVE REDUCTION IN SYSTOLIC
PRESSURE

More than 75 mm.	7
50-75 mm.	13
25-50 mm.	14
Less than 25	8
No reduction	3

TABLE 5
SYMPATHECTOMY FOR HYPERTENSION
POSTOPERATIVE REDUCTION IN DIASTOLIC
PRESSURE

More than 50 mm.	9
25-50 mm.	13
10-25 mm.	11
No reduction	12

example, the operative treatment was undertaken in a number of our patients almost entirely for the relief of unbearable subjective symptoms. In this respect, it has been almost universally successful. Headaches have been relieved and vision has been restored to a number of patients. Further-

more, as already pointed out, the most strikingly successful results which we have obtained have been in young people who would otherwise almost certainly have been condemned to suffering, disability, and short life. Were we not careful to curb our satisfaction, the strikingly beneficial results in some of these patients might well lead us to unbridled enthusiasm regarding this formidable method of treatment.

We must bend over backward, however, to draw no false conclusions, to make no untenable predictions, and to avoid offering the operative treatment of hypertension as a "cure-all" to any patient suffering from high blood pressure. On the contrary, we must select our cases carefully, study them thoroughly, evaluate the results as honestly as possible, and recognize clearly that newer knowledge and still more improvements await us in the field of this distressing condition. Meantime, it is equally true that we do have something of real value to offer in certain cases who would otherwise be condemned to a limited lifetime of suffering and illness.

TOXICITY OF DDT FOR MAN

RICHARD M. GARRETT, M. D.

Montgomery, Alabama

Numerous reports have been published relating the effects of DDT on insects; some experimental work on feeding DDT to laboratory animals has been described, but the effects on human beings following ingestion of DDT has been untouched. An accident made it possible to observe the effects of DDT ingested by 28 persons.

A group of Formosan prisoners of war who were engaged in salvage and reconstruction work in the Philippines were given punishment consisting in the elimination of the evening meal for reluctance to performing assigned duty. Around midnight of the same evening some members of this group eluded the stockade guard and made their way to the company kitchen, there stealing a box containing a powder which they thought was flour. They were 90% correct,

Formerly, Captain, Medical Corps, Army of the United States.

but their 10% error was in the form of DDT. The pure chemical had been used in making a 10% dusting powder, flour being used as a diluent.

This stolen flour was used to make a dough which the Formosans then cooked over a small gasoline burner in their tents, using mess kits as baking pans. The chemical is apparently very stable; storage for long periods in the high temperatures of the tropics or in cargo holds apparently causes no deterioration. As the center of the biscuits made with this flour was not well cooked, there would still be some unaffected DDT there, even though the heat in the outer crust may have caused a breakdown of the DDT in the outer shell.

At 3 a.m. of the same night the patients were brought to the 174th Station Hospital, Luzon Prisoner of War Camp No. 1, and were examined by an American medical

officer. The history, as taken through interpreters, revealed that within thirty minutes to one hour after eating the biscuits all had severe episodes of vomiting and a gradual numbing and weakening of the extremities. The amounts eaten varied from one small biscuit to an entire mess kit filled with the half-baked dough. All the patients had been assigned to work on the previous days, so it was assumed that none was suffering from malnutrition or beriberi. Because of the prevalence of these two conditions among newly arrived prisoners of war, this had to be ruled out as the cause of the numbness.

When first seen, 20 of the men showed a look of apprehension, more than simple fear of the consequences of stealing, but a wild, excited look. Several exhibited a mild clonic convulsive state. None had any noticeable change of pupillary action. Their respiratory rates were moderately rapid. The pulse rate was between 45 and 60 per minute, in spite of their excited appearance; the pulse was full. The facial, masticator, neck and trunk muscles appeared unaffected.

All patients had weakness of the fingers

and hands; 10 had wrist drop and complete loss of voluntary contraction of the hands. These stated that they had eaten "a good bit" of the concoction. Only 5 showed remarkable weakness of the elbows, and these confessed eating an entire mess kit full of the dough. The pectoral girdle showed no ill effects. All complained of numbness of the hands and forearm, although the difference between tingling, paresthesia and numbness is difficult to define through two interpreters (English-Japanese and Japanese-Formosan).

Weakness and numbness of the feet were universal complaints, irrespective of the amount of DDT eaten. Weakness of the knees was noted in the same 5 who complained of elbow weakness; they were unable to stand alone. The gluteal muscles were not affected, apparently. In other words, the paralysis and numbness were most evident in the most distal portions of the extremities and directly proportional to the amounts of DDT ingested.

Proprioception and vibratory sensation were inaccurate in 10 of the patients: this effect was noted in the fingers and toes,

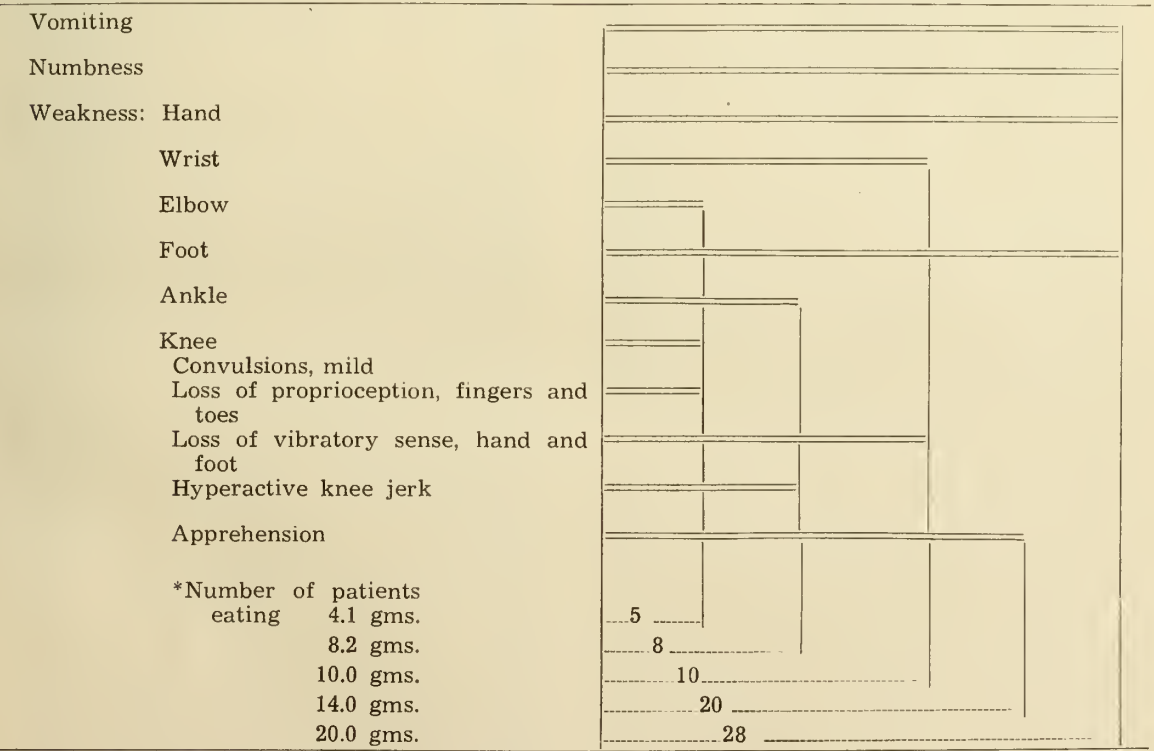


Fig. 1. Symptoms and physical signs elicited and rough comparison of amounts of DDT eaten to these symptoms and signs.

*These figures were obtained by weighing flour subsequent to the accident, trying to approximate the amounts eaten by the prisoners of war as nearly as possible.

not in the more proximal joints. The knee jerk was hyperactive in 8 patients. The Babinski reflex was negative in all patients checked.

The laboratory studies were confined to complete blood counts and urinalysis. The values here were comparable to those of other prisoners of war who had not been exposed to DDT. The urinary output was normal for two days after the incident and presumably so thereafter. There was no diarrhea, and no blood was noted in stool or urine.

The body's immediate detoxifying mechanism seems to have been vomiting. Some of the DDT was absorbed before the stomach was emptied, as evidenced by the ensuing symptoms. To insure cleansing of the stomach, warm water and emetics were given. Six patients with a pulse rate of less than 48 per minute were given strychnine, and all received phenobarbital to allay apprehension and to quiet the convulsive movements. Treatment was mainly symptomatic for headache and nervousness.

There were no deaths in this group of 28 patients. Within forty-eight hours only 8

were suffering any ill effects. At the end of two weeks 3 patients had weakness of both hands and feet. Five weeks after the incident all were transferred, and at that time these 3 had not recovered full use of their hands.

SUMMARY

1. Twenty-eight men who had eaten DDT were observed; the amounts ingested varied from a small amount to an army mess kit filled with 10% DDT powder in the form of half-baked biscuits.

2. Vomiting, numbness and partial paralysis of the extremities, mild convulsions, loss of proprioception and vibratory sensation in the extremities, and a hyperactive knee jerk reflex were immediate toxic effects noted, but all these effects were transient except in 3 patients who had eaten excessive amounts.

3. The immediate detoxifying mechanism in human beings is vomiting. This paper does not attempt a discussion of methods of detoxifying DDT already absorbed from the gastrointestinal tract.

Desiccated Thyroid—Thyroid is used consistently and erroneously in the treatment of obesity. In my judgment there is no such disorder as thyroid obesity; in fact more hyperthyroid sufferers are thin than fat. If one has myxedema he will lose weight while taking thyroid until the myxedematous infiltration is metabolized and the by-products of his faulty protein metabolism are eliminated. After this point, thyroid will merely act as it does in the normal individual. Since we have pointed out that thyroid will depress the function of the gland, it could conceivably enhance rather than alleviate the deposition of fat. If one administers thyroid to the point where the metabolism is actually stimulated, increased appetite and nervousness often add to the patient's discomfort.

I have seen numerous obese individuals in whom physicians were trying to force a result by administering large doses of thyroid. One such patient was actually given eighteen grains of a very potent desiccated thyroid daily for over a year. She was also placed on an eight-hundred calorie diet. If it had not been for the fact that she stole from fifteen hundred to two thousand calories a day in addition to the diet, she would not have survived. While her basal metabolic rate rose to only plus 37 she became severely decalcified and lost several teeth through demineralization of the alveolar processes. The weight loss for that hectic year was eleven pounds. After thyroid was entirely withdrawn, the basal metabolic rate came back to around minus 12 in about six months, during

which period she also lost forty pounds on a restricted diet.—*Shelton, California Medicine, July '47.*

The Doctor and the Public—In the final analysis, improving the relationship between the doctor and the public means establishing once again the position of authority, both in medicine and in the community life, which the doctor traditionally should occupy. Authority, studies in psychotherapy show, accounts for a sizeable proportion of the success of the physician in treating the sick, at least as often sick in the emotions as in the organs of the body. To lose that fundamental relationship between doctor and patient, or doctor and community, is to lose a valuable weapon in fighting disease. And it is being lost rapidly through the distrust of the public for the ultimate motives of the medical profession. Today there is little of it between specialist and patient, and far less than there should be between family doctor and practice. The position of authority must be recaptured at all cost, and its recovery must be accomplished largely through the efforts of the individual physician.

When the public realizes that the medical profession is as much concerned with the broad social and economic phases of medical care as it is with strictly scientific medicine, much of the task of improving the present low state of medical public relations will have been accomplished. This is the work largely of each doctor in his own practice and in his own community, assisted as he will be by experts in public relations.—*Slaughter, J. Florida M. A., July '47.*

Endocrine Therapy—The menopause is a time when women may be subject to physical inconveniences as a result of aging ovaries and their gradual cessation of function. This retirement of ovarian activity demands a rebalancing of the relationships of endocrine organs throughout the body. The removal of the ovarian hormones, or rather a marked reduction of them, removes a damping effect upon the pituitary gland so that this gland is therefore released from restraints, and overactivity of secretion with hyperactivity in others is the result.

In the great majority of women this readjustment occurs with a minimum of discomfort; in others many symptoms comprising the well known menopausal syndrome are occasioned. The degree to which this is true depends upon many factors, such as folklore, the emotional stability or lack of it, the status of family life and the position of the woman in it, as well as the state of health and well being.

Much misconception has gone abroad with regard to the menopause, both in lay and professional circles. On the one hand, women have been led to believe that this period of life is their special burden and that they should be relieved of it; on the other, the profession has given estrogens with little discrimination, encouraging the attitude of women generally that estrogens can give indefinite relief.

Nothing could be further from the truth. Estrogens do relieve symptoms, but most certainly they also delay the recovery of endocrine balance, which should occur at this time of life. Indeed, this fallacy has been carried to such an extent that we now see estrin addicts, women who have so retarded the natural sequence of events that they have after many years become so dependent upon this form of therapy as to make it doubtful whether they can ever exist without it.

In itself this might be harmless, though we do not know this certainly; but postmenopausal bleeding has no longer become the definite signal of some serious malady, masking certain ovarian tumors or cancers itself. With this situation engrafted upon a normal apathetic attitude toward vaginal bleeding, it is almost certain that many more women than formerly will develop advanced cancer before they present themselves to the physician for valuation. This alone should form an indictment against routine or continuous estrin therapy in the menopause.

The physician should assure himself that there is adequate reason for estrin therapy before prescribing it. Having commenced such therapy, he should feel a moral responsibility for keeping in touch with the patient and, after a period of months, for weaning her from the treatments by gradually withdrawing the drug. This point of view cannot be too strongly urged.

The giving of estrin "shots" indiscriminately cannot be too seriously called to the attention of the profession. Nor should we be too greatly influenced by the popular articles in the lay press and by the publicity of pharmaceutical houses. Our responsibility is clear and we must avoid the catastrophes which may ensue.—*Traut, Cincinnati J. Med., July '47.*

Emotions in Disease—Not only do emotional conflicts find expression in the guise of functional disorders, but if they occur repeatedly, and if they dominate the life of the individual, it is logical to suppose that they might leave an imprint upon the tissues, and produce organic or physical disease. Let us cite a few examples of the possible relationship of psychological and emotional disturbances to alterations in structure.

The effects of the emotions and nervous strain, which tend to be greatest in the hollow organs, consist for the most part of changes in muscle tone, circulation, and secretion. Emotional conflicts, for instance, often cause a spasmodic contracture of the musculature of the stomach, and a local constriction of the terminal blood vessels. Small areas of ischemia or hemorrhagic infarction are thus produced, leaving the overlying mucosa exposed to the digestive effects of its own hyperacid juices, and rendering it more susceptible to infection. In this way, regressive, necrobiotic tissue changes may be initiated or aggravated. There is much to suggest that this is the mechanism underlying the etiology and pathology of peptic ulcer. Mucous colitis and ulcerative colitis may also be regarded as physiological expressions of some deep-seated emotional conflict. When the latter is removed, the intestinal motility returns to normal and the symptoms often promptly disappear. Acute episodes of emotional origin may hasten the development of organic heart disease, which might be indefinitely postponed in the absence of psychic stress. Clinical and pathological studies have brought to light the fact that the morbid manifestations of such an organic disease par excellence as angina pectoris appear to be controlled, to a certain extent at least, by the emotions. The relationship of psychic factors to the onset of hypertension is well known. Anxiety, fear, and sudden shock quite often bring on a frank exophthalmic goitre. We also note the apparent effect of emotional conflicts on the blood sugar level and in the genesis of diabetes mellitus, especially those which operate at the unconscious level, and which involve threats to the personal safety, security, and prestige of the individual. The occurrence of attacks of bronchial asthma is more or less conditioned by emotional factors. Chronic arthritis is another organic disease which is due largely to certain strong emotional influences causing tensions and spasms of the muscles and thus affecting the working of the joints.

As a matter of fact, we should not be too greatly concerned with the possible relationship of psychological disturbances to structural alteration. The problem of whether long continued emotional stresses can produce organic disease is rather involved and complicated. The evidence is beginning to point in this direction, but the question cannot be proved or solved at this time. It should be emphasized, however, that the emotions as etiological factors in organic disease must always be taken into consideration.

In other words, it is now realized that practically all physical illness has associated mental and emotional aspects.—*Harrison, Delaware State M. J., May '47.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham

C. E. ABBOTT Tuscaloosa

JOHN L. BRANCH Montgomery

D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

August 1947

POLIOMYELITIS

Again, during these summer months, outbreaks of poliomyelitis are making their appearance in many sections of the country. Last year 25,191 cases occurred in the nation, 378 of them within this state. No one can forecast how many cases will occur this year or how badly the communities in this area will be affected. Medical science, unfortunately, cannot as yet prevent an epidemic or even one case.

Physicians in this state, as well as elsewhere, are aware of the multitude of problems poliomyelitis presents. Treatment of the disease is apt to be prolonged and extremely costly, requiring the services of many specialists. Too often the patient's family looks to the physician for advice and guidance far beyond the immediate problem of medical care.

In times such as these it is helpful to physicians to know that there are others prepared to share these troublesome burdens. In addition to making possible epidemic aid, education, and scientific research, the National Foundation for Infantile Paralysis is pledged to assist financially those patients who require such help. Through their generous contributions to the March of Dimes, the American people have made this possi-

ble. Hospital bills, salaries for physical therapists and nurses, purchase of special equipment, and the many other charges which may comprise the essentials of good medical care may be paid for by the Chapters of the National Foundation when necessary. Local Chapters of the National Foundation are scattered throughout the United States. There is one in or near your own community. Your local health department can furnish you with the address of the Chapter nearest you.

Physicians serve on the local Chapter's Medical Advisory Committee, guiding the Chapter in developing medical care programs and solving allied problems. The Journal urges you to cooperate with National Foundation Chapters in furthering their programs of medical care. Notify the local Chapter when a poliomyelitis patient comes under your supervision. Make certain that the family of your patient knows of the Chapter's existence and willingness to assist. By so doing you will be performing an essential service to your patient and relieving yourself of many unnecessary burdens.

JOB T. CATER MEMORIAL

Dr. Charles A. Thigpen, distinguished Alabama ophthalmologist for the past fifty years, has presented to the Medical College of Alabama the sum of \$10,000 to be used for the conversion of one floor in the Jefferson Hospital into a complete ophthalmic hospital, with operating rooms, museum, conference rooms and bed space for patients.

This gift is in memory of his late nephew, Dr. Job T. Cater, who was associated with him in practice. The unit will be known as The Thigpen-Cater Ophthalmic Hospital.

DR. W. M. SALTER NAMED ALABAMA'S REPRESENTATIVE ON S. M. A. COUNCIL

Dr. Wilbur M. Salter, Anniston, has been appointed a member of the Council of the Southern Medical Association from Alabama for a regular Council term of five years beginning at the close of the annual meeting in Baltimore in November, the appointment having been announced recently by the President-Elect, Dr. Lucien A. LeDoux, New Orleans, Louisiana. Dr. Salter succeeds Dr. Harvey B. Searcy, Tuscaloosa,

whose term will expire with the close of the Baltimore meeting in November, and who, having served the constitutional limit, is not eligible for reappointment.

TREATMENT OF INFECTIONS OF THE URINARY TRACT

"Until about fifteen years ago management of infections of the urinary tract was carried out in an empirical fashion. The patient who complained of the usual symptoms of such infections consulted a physician and was given a prescription on the basis of his complaint, and no consideration was given to the type or degree of infection present. Little or no attention was paid to co-existing pathologic conditions. Fortunately, due to the advances that have been made in this field in the past fifteen years, present methods of treatment are much more scientific and results obtained in treatment are more satisfactory.

"The early work of Scholl, Janney, Clark, Helmholtz and many others has shown the importance of proper bacteriologic study of the urine. . . . Careful microscopic examinations of the urinary sediment must be carried out."

Thus do Pool and Cook¹ begin their discussion of this subject, a subject that must of necessity be of interest to the vast majority of practitioners. The Rochester investigators consider the various methods of dealing with infections of the urinary tract and they tell us in conclusion that "two important factors must be considered in the management of infections of the urinary tract. The first is the co-existence of other pathologic processes in the urinary tract. It was observed early that the presence of obstruction, tumor, stone or pronounced chronic inflammatory changes in the urinary tract definitely reduced the efficacy of the ketogenic diet in the eradication of urinary infection and that when none of these pathologic processes were present the results of treatment with the ketogenic diet were much better. Exactly the same observations were made when mandelic acid, the sulfonamide compounds, penicillin and streptomycin were used. The other factor is the varia-

tion in the results obtained against various strains of organisms. This definitely suggests the importance of using various therapeutic compounds in alternate courses if one or another fails to eradicate the infection. Of course it is useless to do this if co-existing pathologic conditions have not been removed first of all.

"For the routine treatment of infections of the urinary tract, mandelic acid and the sulfonamide compounds are still the drugs of choice. Penicillin is a great adjunct to treatment, but it has not been the boon for which we had hoped in the ordinary case of nonspecific infection of the urinary tract. Streptomycin produces spectacular results in some cases of resistant urinary infection but cannot be used routinely at the present time. Our studies concerning this drug are incomplete because the supply has been so limited that it has been impossible to carry out the investigative work that should go along with the study of any antiseptic."

In few fields has more progress been made in the past twenty-five years than in the diagnosis and treatment of pathologic conditions within the urinary tract. A generation ago the use of the cystoscope was limited mostly to a few large medical centers whereas today it is available almost everywhere. Pool and Cook are indeed upon firm ground when they insist that the "co-existing pathologic conditions" be considered as well as the urinary infection itself. And it is encouraging to realize that this is being done more and more. Much yet remains to be done, but the progress made since World War I has been great. And all practitioners with twenty or more years behind them are in a position to give thanks that, for treating urinary infections, we now have available methods other than the routine and excessive drugging with urotropin.

TREATMENT OF ROCKY MOUNTAIN SPOTTED FEVER

"The name Rocky Mountain spotted fever is now obviously geographically incorrect, since this disease has been found in forty-seven of the forty-eight states. Ten years ago 70 per cent of the cases occurred in the Mountain and Pacific states, while, in 1945, 87 per cent were reported from the Central and Eastern states. Its incidence and importance to public health in the United

1. Pool, Thomas L., and Cook, Edward N.: Present Concepts of Treatment of Infections of the Urinary Tract, J. A. M. A. 133: 584 (March 1) 1947.

States are shown by the occurrence of 400 to 560 cases with 90 to 137 deaths each year during the past decade."

The above are the opening lines of the recently published study of this dread disease made by Ravenel.¹ The author goes on to tell us that "it was not until 1944 that the careful studies of Harrell, Venning and Wolff revealed the pathologic physiology of Rocky Mountain spotted fever and explained why properly chosen intravenous supportive therapy was so beneficial. They showed that because of the widespread vascular lesions plus starvation there was a tremendous loss of circulating body fluids and protein, with lowering of the blood chlorides, elevation of the nonprotein nitrogen of the blood and potential or actual development of peripheral circulatory collapse."

Ravenel gives an outline of treatment, the major portions of which are as follows:

"1. The fluid and electrolyte balance should be restored to normal by means of intravenous injections of dextrose in saline or lactate-Ringer's solution. It should then be maintained at the normal level by the oral intake of fluids and added sodium chloride. It has been pointed out . . . that intravenous injections of electrolytes in solution in a patient whose serum protein is too low will serve only to produce more edema and, possibly, circulatory failure with pulmonary edema.

"2. Acidosis should be corrected by intravenous and subcutaneous injections of sixth-molar sodium lactate solution in appropriate dosage.

"3. The serum protein level of the blood, depleted in this disease by starvation, vascular damage and hepatic failure, should be restored to normal by intravenous injections of plasma. . . . This level should be maintained by further injections of plasma at appropriate intervals and by a high protein diet (fed by gavage if necessary). If anemia develops, transfusions of blood should be given freely.

"4. A high intake of vitamins should be furnished by mouth, by gavage or by the parenteral route if necessary. Thiamine is given to help prevent shock, ascorbic acid to obviate endothelial damage to blood vessels,

vitamins B complex and K for damage to the liver and for increased prothrombin time.

"5. Para-aminobenzoic acid, 0.5 to 1 Gm. per pound of body weight per day, is given, depending on the size of the patient. . . .

"6. The possible toxic effects of para-aminobenzoic acid should be watched for: acidosis, leukopenia, abdominal distention and delirium. If the white blood cell count falls below 3,000 the administration of para-aminobenzoic acid should be discontinued."

The complications of Rocky Mountain spotted fever for which one should be on the alert are congestive cardiac failure, pneumonia, encephalitis and thrombophlebitis.

The author also tells us that "the sulfonamide compounds are not only useless but probably harmful in the treatment of this disease." And "although rickettsias are reported to be sensitive to penicillin, this agent has proved useless in the treatment of Rocky Mountain spotted fever."

This rickettsial fever is primarily a disease of ticks and is usually contracted in rural areas. Therefore the problem of a prompt diagnosis falls most often upon the general practitioner. But, obviously, satisfactory treatment can be carried out only in a well equipped hospital.

Ravenel informs us that "it must be emphasized that para-aminobenzoic acid alone is not the sole answer to this therapeutic problem but constitutes an extremely important specific adjuvant comparable to insulin in diabetic coma or sulfadiazine in meningococcal septicemia and bacillary dysentery."

A good many years ago the doctors in this section read about undulant fever, then endemic and epidemic in the Middle West, but encountered no cases themselves. Suddenly it broke out in Georgia and then appeared in Alabama. The older physicians remember the eastward migration of tularemia, which was first reported in California and which spread until the entire nation was covered. And in our own state we have witnessed the march of Brill's disease, from south to north, until no section of Alabama could be called immune. Therefore, it behooves the profession in this region to bear in mind the possibility of an outbreak of Rocky Mountain spotted fever

1. Ravenel, Samuel F.: Para-Aminobenzoic Acid Therapy of Rocky Mountain Spotted Fever, J. A. M. A. 133: 989 (April 5) 1947.

and to be on the alert for its prompt recognition.

AMERICAN CONGRESS OF PHYSICAL MEDICINE

The American Congress of Physical Medicine will hold its twenty-fifth annual scientific and clinical session Sept. 2, 3, 4, 5 and 6 inclusive, at the Hotel Radisson, Minneapolis. Scientific and clinical sessions will be given the days of Sept. 3, 4, 5 and 6. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, the annual instruction courses will be held Sept. 2, 3, 4 and 5. These courses will be open to physicians and the therapists registered with the American Registry of Physical Therapy Technicians. For information concerning the convention and the instruction course, address the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

DR. CLOWES HONORED

Dr. G. H. A. Clowes, Ph. D., Sc. D., LL. D., Director Emeritus of the Lilly Research Laboratories, was honored by the American Diabetes Association at its recent annual meeting in Atlantic City, New Jersey. He delivered the annual Banting Memorial address and was awarded the Banting Medal which is given in recognition of distinguished service in the field of diabetes.

Under Dr. Clowes' direction, the Lilly Research Laboratories cooperated with the University of Toronto and Drs. Banting and Best in the early development of insulin of sufficient purity and stability to permit its widespread clinical use throughout the world.

INTERNATIONAL COLLEGE OF SURGEONS

The International College of Surgeons, United States Chapter, will hold its Twelfth Annual Assembly and Convocation in Chicago, September 28 to October 4, 1947. The program will include operative and non-operative clinics, demonstrations, symposia, forums, medical motion pictures, exhibits and the formal dedication of the new library and permanent home of the United States chapter. All meetings, with the ex-

ception of the operative clinics, will be held in the Palmer House and the Stevens Hotel. The Cook County Hospital of Chicago has reserved Friday, October 3, for operative clinics, round table discussions and demonstrations for the attending Fellows of the College. Twenty other hospitals of Chicago will be hosts at surgical clinics and demonstrations on October 4. General Chairman of the meeting is Raymond W. Nealy, M. D., Chicago; and Co-Chairmen are Karl Meyer, M. D. and Max Thorek, M. D. of Chicago.

Louis J. Gariepy, M. D. of Detroit, Secretary of the U. S. Chapter, announced that the annual meeting of the House of Delegates and election of officers would be held on September 28 and 29 immediately preceding the Assembly and Convocation. Presiding will be President Herbert Acuff, M. D. of Knoxville, Tennessee.

Copy of the program and detailed information may be obtained by writing Max Thorek, M. D., Co-Chairman, 1516 Lake Shore Drive, Chicago, Illinois.

WILLIAMS NAMED ASSISTANT TO LORANZ

Mr. H. L. Williams of Birmingham has joined the headquarters staff of the Southern Medical Association as Assistant to the Secretary-Manager, Mr. C. P. Loran.

Herbert Lee Williams was born in Birmingham on June 1, 1918, the fourth of seven children born to his parents. His father was for some time affiliated with the Birmingham Age-Herald, later managed the Florence Times, and is at present publisher of two daily newspapers, one in West Tennessee and one in West Kentucky. Mr. Williams is the only member of the original family who has returned to Birmingham to make it his permanent home.

He attended grade school in Florence, Alabama, completed high school in Paris, Tennessee, was graduated from Murray State College in Kentucky, and received an M. A. degree from the University of Mississippi. His undergraduate major was in the field of journalism and his graduate degree was taken in English. At the University of Mississippi he held a fellowship in the department of English for the 1940-41 session.

In September of 1941 Mr. Williams entered the naval service as an enlisted man. After

serving fifteen months in the North Atlantic aboard a destroyer he was returned to Northwestern University in Chicago for officer training. After receiving his commission in 1943 he served twenty-seven months in the South Pacific aboard a cruiser and an LST. At the time of his release in early 1946 he held the rank of Lieutenant (jg).

After his discharge from the Navy, he returned to Birmingham and accepted a teaching position in the city, which he relinquished for a position in the Advertising Department of the Alabama Power Company. When the availability of the position as assistant to Mr. Loranz was made known, Mr. Williams made application, with the recommendation of the Advertising Manager of the Power Company, as both recognized the opportunity as the one for which Mr. Williams had been waiting.

Mr. Williams' other professional experience includes various clerical and selling jobs, many of which were held during summer vacations, among them work on his father's newspaper in almost all departments.

Mr. Williams is twenty-nine years of age and is single. He is an active member of the Junior Chamber of Commerce and a member of the Presbyterian Church.

SCHEELE SUCCEEDS SPENCER AT NATIONAL CANCER INSTITUTE

The resignation of Dr. R. R. Spencer as Chief of the National Cancer Institute of the U. S. Public Health Service effective July 1 was announced at the quarterly meeting of the Institute's National Advisory Council, in Bethesda. At the same time, Dr. Thomas Parran, Surgeon General, informed the Council that Dr. Leonard A. Scheele, formerly Assistant Chief of the Institute, would succeed Dr. Spencer.

Simultaneously, the appointment of Dr. A. C. Ivy, Vice President of the University of Illinois and one of the country's leading physiologists, to fill the empty post of Executive Director of the National Cancer Advisory Council was announced. Dr. Ivy succeeds Dr. George M. Smith, Professor Emeritus of Yale University, who resigned some months ago for reasons of health.

The resignation of Dr. Spencer, widely known for his research achievements in

the biological sciences before he joined the National Cancer Institute in 1939, does not mean that he is withdrawing from the work of the Institute. On the contrary, according to his statement of resignation, he is "shedding the constantly increasing load of administrative duties in order to spend full time on the two phases of the cancer program that interest me most—professional education and research."

In his new capacity he will direct the Institute's greatly expanding program for professional training of young physicians in the diagnosis and treatment of cancer. At the same time, he will carry on a fundamental research project on the mechanism of cellular and species survival, which is definitely related to the cancer process.

Dr. Spencer has already made one outstanding contribution in the field of medical research, in his work on "tick fever" (Rocky Mountain Spotted Fever). In 1922, with Dr. R. R. Parker, an entomologist, he worked on the tick fever problem until they succeeded in developing a vaccine that would immunize people against the disease. The story of their work was told in the chapter, "Spencer in the Happy Valley," which appears in Paul de Kruif's book, *Men Against Death*.

Dr. Leonard Scheele, who will take over the administration of the Institute as its new chief, has been associated with the Public Health Service since 1933. During the five years prior to the outbreak of World War II he was a member of the staff of the National Cancer Institute and was concerned with studies in epidemiology of cancer, studies of end-results of cancer treatment, and liaison with the States and various medical organizations on cancer control.

During the war he served in Military Government and Allied Commission medical operations in Italy and later was in charge of the Preventive Medicine Section of the G-5 Division of Supreme Headquarters of the Allied Expeditionary Force in Northwest Europe. Later he was the medical representative of the Medical Section of the Allied Control Council in initial operations of that group in Berlin after the surrender of Germany.

He was awarded the American Typhus Medal for his work in the control of that disease in Northwest Europe during 1944-

45, and the Legion of Merit for outstanding work in controlling communicable diseases in the European Theater of Operations. In addition he has received several foreign decorations.

Dr. A. C. Ivy, who has been a member of the Council for the past two years, and is also a member of the Board of Directors of the American Cancer Society, is best known in the scientific field for his contributions on the physiology of the gastro-intestinal hormones. With his co-workers at Northwestern University, where he formerly

served as Head of the Department of Physiology and Pharmacology, he was largely responsible for the discovery and isolation of the hormone now known as entrogastone.

Dr. Ivy is currently in Germany serving as one of the expert witnesses in the Nuremberg trials in the investigation of alleged cruel and inhuman use of human beings for experimental purposes by the Nazis. He will take up the part time post of Executive Director of the Council upon his return late this month.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

ROCKY MOUNTAIN SPOTTED FEVER

You have heard of the actual or imaginary postman who went for a long walk on his day off from work, and you have heard sermons by ministers who were supposed to be enjoying vacations. But perhaps you have not heard about a certain young faculty member of the Department of Pathology and Bacteriology at the University of Chicago who went to Montana to get a rest, worked harder during that so-called "rest" than he did on his regular job and made one of the most important and far-reaching discoveries ever made in the field of life-saving and health protection.

That young medical man was Howard Taylor Ricketts. Several years after joining the staff of the University of Chicago, he began to show plainly the effects of overwork and in the spring of 1906 decided to get away from it all for a while and take things easy. But his idea of a vacation was different from most people's. To him a vacation did not mean doing nothing but rather doing something different. So he decided to spend the leave granted him in making a careful study of one of the most baffling diseases of his time, Rocky Mountain spotted fever. The best place to study it, he decided, was where it was found in its most dangerous and virulent form. That meant the western part of Montana, specifically the city of Missoula.

With financial assistance from such groups as the American Medical Association, the Montana State Board of Health, two Montana counties, and the McCormick Memorial Institute for Infectious Diseases, as well as the institution that had granted him this leave of absence, he began his studies in April 1906. Fortunately, he was able to find the laboratory facilities he needed at the Northern Pacific Hospital and the University of Montana.

Medical science then had much less knowledge of Rocky Mountain spotted fever than it has today, of course, and that added to his difficulties. Indeed about all he had to go on—and that was none too dependable—was the fact that the disease seemed to be transmitted by some form of insect and two research workers had built up a fairly strong case for the theory that the wood tick (known scientifically as the *Dermacentor andersoni*) might be the villain of the piece. But that was all. Practically the whole job of proving this theory, or disproving it, remained to be accomplished. Becoming more and more interested in this search for knowledge as he went along, he quickly caught the spirit of the huntsman on the trail of his quarry.

Early in his studies young Dr. Ricketts was successful in inducing typical cases of Rocky Mountain spotted fever in Rhesus monkeys and guinea pigs. He did this by inoculating them with defibrinated blood taken from persons having the disease. From this initial success he gained an important bit of knowledge; namely, that the virus of

the disease was to be found in the blood of its victims. Later experiments showed that it was possible to pass the infectious agent from one guinea pig to another by means of direct inoculation. He also learned that a case of Rocky Mountain spotted fever that did not prove fatal conferred lifetime immunity to the disease, at least among the small rodents to whom he was looking for answers to his many questions about this form of illness.

His discovery that the causative agent of Rocky Mountain spotted fever was present in the blood of its victims opened the way for other important and far-reaching discoveries. For one thing, it enabled him to go a long way toward finding a "yes" or "no" answer to the question raised, but not answered, some years earlier by the two scientists who have already been mentioned. That question, you remember, had to do with the part that might be played by the wood tick in the disease's transmission from the sick to the well. Taking one of the guinea pigs in which had induced a case of Rocky Mountain spotted fever, he placed on it one of the wood ticks he had collected for experimental purposes and left it there long enough for it to bite the guinea pig and thus transfer some of the rodent's blood into its own body. Then he placed the wood tick on another guinea pig which was known to be free from the disease. In a short time he had his answer. For the second guinea pig soon developed a typical case of Rocky Mountain spotted fever. Additional weight was given to the theory of wood tick transmission by another experiment conducted at the same time. Two healthy guinea pigs were bitten by a wood tick which had not been exposed to Rocky Mountain spotted fever, while two others, also healthy, were placed for two weeks in the same box that contained the guinea pig which was suffering from the disease. Neither of these four healthy guinea pigs developed the disease. Thus the theory was proved both positively and negatively. The young University of Chicago research worker in other experiments showed that both male and female ticks were capable of becoming instruments in the transmission of the disease.

These experiments of course centered the battle against Rocky Mountain spotted fever upon the tick, and Dr. Ricketts and

other medical men became interested in its habits and methods of development, just as Alabama's own William Crawford Gorgas became greatly interested in the evolution and peculiarities of the malaria-transmitting *anopheles* mosquito and the yellow fever-transmitting *stegomyia*. These experts learned that the adult female tick laid her eggs in the late spring and early summer after getting blood from a human or animal; that she then died; that in about two or three weeks the eggs hatched out, and the infant ticks, known as seed ticks or larvae, became attached to animals, on which they fed for a few days; that then the young ticks dropped off and went into a molt, later emerging as nymphs; that the nymphs also attached themselves to animals upon which they fed generously of blood; that they then dropped off and went into a second molt; that they emerged from this second molt as adult ticks. In that form, it was learned, they hibernated during the cold winter months, only to become active with the onset of warm weather. This inactivity during the winter explained to Dr. Ricketts and other researchers why Rocky Mountain spotted fever was seldom found except in the spring. They also learned that the ticks could become infected in either of the three states in which they become attached to animals—the larval, the nymphal or the adult. Fortunately, however, they seldom bite humans in the first two stages. So they need be feared as a spreader of Rocky Mountain spotted fever among men, women and children only after they have reached the adult stage.

As his investigations continued, Dr. Ricketts made an important but rather an alarming discovery: It was not necessary for a tick to bite an animal infected with Rocky Mountain spotted fever to become infected itself and therefore constitute a menace to humans. An infected mother tick could pass the infection to her offspring just as easily as a human mother might pass a mental condition or a predisposition to certain diseases on to her children. This discovery explained why Rocky Mountain spotted fever did not die out permanently during its periods of temporary disappearance following its outbreaks in the spring. However, Ricketts held to his theory that it was necessary to have an animal reservoir of infection before

the disease could reappear periodically in the same community. Subsequent experiments by others have shown that apparently he was incorrect in this assumption, although there is still a lack of complete unanimity on this subject among men and women of science.

As illuminating as his discoveries thus far had been, Ricketts realized that he still had not yet solved the major riddle of Rocky Mountain spotted fever. It was transmitted by ticks, yes. But what kind of organism caused the disease in the first place and lent itself so easily to transmission from the sick to the well? That was set as the next step in his journey in search of the means of conquest of this form of illness.

During those earlier experiments he had noticed that the blood of victims of Rocky Mountain spotted fever consistently contained very small bacillus-like bodies. This would seem to indicate that they were the germs of the disease, but, careful, deliberate and cautious as he was, he did not wish to place himself in an untenable position by stating a theory which he could not prove. His inability to prove this one was due to his inability to cultivate these mysterious bodies outside the human body, in spite of his tireless efforts to do so, using every culture medium at his command.

After a prolonged period of failure, he made up his mind to approach the problem from another direction. Turning to good account his discovery that baby ticks could be infected from their mothers, he began paying more attention to that all-important link between the female tick and her offspring—the egg. Making a careful examination of the eggs of infected ticks, he was surprised and delighted to find that they contained minute organisms of various shapes and forms. He was particularly delighted to find that some of them were strikingly similar to those which he had seen in the blood of victims of Rocky Mountain spotted fever. But that was not all. He also found similar microorganisms in large numbers in the salivary glands, alimentary sac and ovaries of female ticks which had been infected with that disease. At last he had a real success to report. He had found the causative agent of Rocky Mountain spotted fever.

One of the characteristics of this type of disease is that the causative agent is incapable of survival and growth outside the human body except in tissue cultures containing living cells. That explains why Ricketts was balked in his effort to cultivate these organisms in the same manner that he and other scientists had been able to cultivate most other types of organisms.

He was also balked in another enterprise. Try as he might, he was never able to develop a vaccine which would afford humans immunity to the disease, although he was finally able to report that he had succeeded in providing this protection to a single guinea pig by an injection of a salt solution containing the tissues of an infected tick which had been ground up and saturated with chloroform. Later experiments, resulting in the vaccine now in use, showed that he was working on the correct theory, because our present-day Rocky Mountain spotted fever vaccine consists of the organs of infected chick embryo cultures which, after being ground up, have been sterilized with phenol.

Ricketts's other contributions to life-saving cannot be discussed now, but his activities in that field were by no means limited to his studies of the causes and methods of transmission of Rocky Mountain spotted fever. During a serious typhus fever outbreak in Mexico City in 1909 and 1910, he, with a capable assistant, identified the germ responsible for that terrible disease and thus gave medical science the knowledge which it needed to master this great scourge of war and peace.

That, unfortunately, was a costly victory, for Ricketts paid for it with his own life, dying of typhus on May 3, 1910. In such tragic but inspiring fashion did a brave and brilliant life reach its end. Had he been privileged to live out his allotted span—he was only 39 when he died—there is no telling how much more humanity would have been indebted to this courageous warrior of medicine.

The family doctor in the city, the country doctor going about from farm to farm, the village doctor in his office over the drug store know the people, have their trust, and guide their physical destinies. The educational pamphlets of a hundred organizations cannot have the enduring effect nor the permeating persuasiveness of the doctor's personal word.—*Herman E. Hilleboe, M. D., Pub. Health Rep., Dec. 6, 1946.*

BUREAU OF LABORATORIES**H P. Sawyer, M. D., Director****SPECIMENS EXAMINED****MAY 1947**

Examination for diphtheria bacilli and Vincent's	315
Agglutination tests (typhoid, Brill's and undulant fever)	1106
Typhoid cultures (blood, feces and urine)	1026
Examinations for malaria	713
Examinations for intestinal parasites	2751
Serologic tests for syphilis (blood and spinal fluids)	25661
Darkfield examinations	36
Examinations for gonococci	3627
Examinations for tubercle bacilli	2110
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	120
Water examinations	1468
Milk and dairy products examinations	3091
Miscellaneous	457
Total	42481

BUREAU OF PREVENTABLE DISEASES**W. H. Y. Smith, M. D., Acting Director****CURRENT MORBIDITY STATISTICS****1947**

	April	May	E.E.* May
Typhoid	4	4	10
Typhus	12	19	28
Malaria	38	71	243
Smallpox	0	0	3
Measles	1151	1201	806
Scarlet fever	59	34	34
Whooping cough	373	427	191
Diphtheria	8	21	16
Influenza	4614	581	179
Mumps	127	159	192
Poliomyelitis	1	2	2
Encephalitis	1	0	2
Chickenpox	570	308	98
Tetanus	2	4	3
Tuberculosis	287	314	278
Pellagra	5	4	18
Meningitis	11	10	11
Pneumonia	425	255	287
Syphilis	1788	2670	1762
Chancroid	31	26	10
Gonorrhea	786	859	451
Tularemia	2	0	2
Undulant fever	14	6	7
Amebic dysentery	2	1	0
Cancer	217	260	0
Rabies—Human cases	0	0	0
Positive animal heads	55	48	0

As reported by physicians and including deaths not reported as cases.

*The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION**Arthur N. Beck, M. S. in S. E., Director****DDT RESIDUAL HOUSE SPRAYING PROGRAM****Contributed by****J. C. Clarke, M. S. in S. E.****Prin. San. and Pub. Health Eng.**

During 1945 approximately 19,000 houses were treated from two to three times with a

2½% DDT spray for the control of malaria transmission in all of Greene County and portions of Autauga, Dallas, Lowndes, Marengo and Montgomery Counties. This program was sponsored jointly by the federal, state and local health departments. All funds, materials and equipment were furnished by the U. S. Public Health Service.

Additional funds were made available during 1946 and the program was expanded to include twenty-one counties. The counties selected for operation were based on the malaria mortality rate during the period 1938-1942. The program was operated in all of Geneva, Greene and Washington Counties and portions of Autauga, Baldwin, Bullock, Clarke, Colbert, Crenshaw, Dallas, Elmore, Hale, Lamar, Lowndes, Macon, Marengo, Monroe, Montgomery, Perry, Sumter and Wilcox Counties. With the exception of Colbert County the program was confined to the twenty most malarious counties in the state. In Colbert County approval was obtained to operate the program in the malaria control district which was established in 1941. In this district a three-mill tax is collected for malaria control purposes. During 1946 approximately 52,000 houses were treated twice with a 5% DDT spray.

In 1947 the amount of federal funds available for DDT residual house spraying work was reduced an appreciable amount. This necessitated, on a state-wide basis, a reduction in the number of houses to be treated in 1947 as compared to those treated in 1946. Plans were made to expand rather than reduce the number of houses to be treated during 1947 through participation in the spraying program by the county governing bodies. Autauga was the first county to manifest interest in expanding the program to include the entire county. A report, together with a cost estimate, was prepared for the proposed program in Autauga County for 1947. The report set forth the work that had been carried out during 1945 and 1946, the area proposed for inclusion in the 1947 program, a cost estimate and plan of operation for spraying the houses in the remaining areas of the county. This work was to be financed and operated by the county governing body with technical direction as needed from the state and county health departments. The proposed program was approved by the county governing body

and plans made for the county to treat approximately one-third of the houses. Similar reports and cost estimates were prepared for all of the counties proposed for operation during 1947 except Baldwin and Elmore Counties. In these counties only about 1400 houses were treated during 1946 and the respective health officers did not feel that their county's governing bodies would be interested in financing a program to include the remaining houses in the counties.

Given below are statistics relative to the program that is now under way.

County	Number of Houses To Be Treated	
	With Federal Funds	With Local Funds
Autauga	2,279	1,477
Baldwin	1,612	
Bullock	1,780	
Chilton		5,100
Clarke	2,800	2,377
Colbert		2,377
Crenshaw	2,467	1,500
Dallas	4,880	2,488
Elmore	1,475	
Geneva	2,825	1,245
Greene	2,666	924
Hale	1,477	
Lamar	1,958	1,458
Lowndes	2,812	1,270
Macon	1,588	
Marengo	3,061	3,078
Monroe	1,585	
Montgomery	4,318	
Perry	987	2,593
Sumter	1,611	
Washington	2,360	1,210
Wilcox	3,907	1,290
Total	48,448	26,010

Included in the above table are 5,100 houses in the county-wide program financed by the Chilton County governing body. In light of available information, Chilton County is the first county in the United States to finance a county-wide DDT residual house spraying program without subsidy from either federal or state government.

In May 1946, the City of Demopolis requested information regarding the operation of a municipally financed DDT residual house spraying program. A report, together with a plan of operation and a cost-estimate, was furnished the city. The report was approved by the city and plans were made to begin spraying operations. Assistance

was given in training the city's personnel and by the end of July the work was completed with approximately 1,000 houses having been treated. The City of Demopolis has the distinction of being the first municipality in the country to conduct a DDT residual house spraying program without financial assistance from state or federal governments. During the remainder of the 1946 insect season similar programs were carried out by the towns of Thomasville and Luverne.

Included in the following table are the municipalities and number of houses to be sprayed during 1947.

Municipality	Number of Houses To Be Treated
Brantley	225
Camden	200
Chapman	235
Clanton	800
Demopolis	1,000
Eutaw	400
Fort Deposit	275
Greensboro	407
Jackson	410
Kennedy	75
Linden	241
Luverne	450
Marion	476
Millport	175
Monroeville	350
Moundville	162
Opp	1,000
Prattville	650
Selma	4,000
Sulligent	275
Thomasville	400
Tuskegee	700
Vernon	180
Total	13,086

Cost estimates were prepared also for Auburn, Brent, Centerville, Dothan, Fayette, Frisco City, Georgiana, Greensboro, Greenville, Grove Hill, Hartford, Huntsville, Livingston, McKenzie, Notasulga, Opelika, Samson, Slocumb, Union Springs, Uniontown, West Blocton and York. However, at this time, definite plans have not been made to carry out programs during the current insect breeding season.

There are three distinct DDT residual house spraying programs under way. The federal, state and local health departments' cooperative program will include about 48,448 houses. This program is carried out at no cost to the local governing bodies. Thirteen counties will supplement the coopera-

tive program by treating 26,010 houses. This program is financed and operated by county governing bodies. Twenty-three municipally financed programs involving 13,086

houses are also under way. Present indications are that the number of county and municipal programs will be increased during 1948.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND DEATHS FROM SPECIFIED CAUSES, FEBRUARY AND MARCH, 1947, AND COMPARATIVE RATES FOR 1947, 1946, AND 1945.

Births, Stillbirths and Causes of Death	Number Registered During February 1947			Rate* (Annual Basis)			Number Registered During March 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	7153	**	**	31.1	23.0	31.4	7442	**	**	29.2	22.9	23.8
Stillbirths	207	**	**	28.1	26.3	42.9	188	**	**	38.8	24.9	24.2
Deaths, exclusive of stillbirths	2078	1182	896	9.0	9.0	9.2	2398	1135	1063	9.4	8.4	8.6
Infant deaths:												
under one year	275	126	149	38.4	46.2	45.0	296	147	149	39.8	40.3	45.8
under one month	162	85	77	22.6	27.1	24.7	151	93	58	20.3	23.0	29.6
Typhoid and paratyphoid 1, 2	1		1	0.4		0.4					1.2	1.2
Epidemic cerebrospinal meningitis 6	3		3	1.3		2.6	3	2	1	1.2	1.6	2.4
Scarlet fever 8												
Whooping cough 9	9	3	6	3.9	0.9	1.3	17	5	12	6.7	0.4	2.8
Diphtheria 10	1		1	0.4		0.9	5	4	1	2.0	0.8	0.4
Tuberculosis, all forms 13-22	95	45	50	41.2	39.5	35.1	103	45	58	40.4	40.0	45.6
Malaria 28					0.4	0.9					1.2	1.2
Syphilis 30	26	10	16	11.3	11.3	14.5	29	6	23	11.4	11.0	10.3
Influenza 33	38	16	22	16.5	37.8	21.5	61	36	25	23.9	23.9	21.0
Measles 35					0.9		2		2	0.8	1.6	
Poliomyelitis 36						0.9					0.4	1.6
Encephalitis 37						0.9						0.8
Typhus fever 39						0.9	1	1		0.4	1.2	0.4
Cancer, all forms 45-55	172	116	56	74.7	74.7	60.5	202	141	61	79.2	67.5	63.4
Diabetes mellitus 61	31	23	8	13.5	9.6	14.9	31	16	15	12.2	12.9	15.0
Pellagra 69	5	4	1	2.2	1.3	3.1	9	5	4	3.5	3.9	2.0
Alcoholism 77	4	2	2	1.7	0.4	0.4					1.6	1.2
Intracranial lesions 83	190	104	86	82.5	94.7	79.4	257	137	120	100.8	80.4	74.1
Diseases of the heart 90-95	457	298	159	198.4	176.7	196.0	513	324	189	201.2	176.5	170.0
Diseases of the arteries 96-99	26	23	3	11.3	9.6	12.3	28	18	10	11.0	9.4	11.9
Bronchitis 106	6	5	1	2.6	0.9	3.1	10	8	2	3.9	1.6	2.0
Pneumonia, all forms 107-109	123	62	61	53.4	56.0	74.1	164	83	81	64.3	57.6	60.2
Diarrhea and enteritis (under 2 years) 119	7	3	4	3.0	2.6	3.5	14	7	7	5.5	3.5	5.9
Diarrhea and enteritis (2 and over) 120	11	9	2	4.8	0.9	1.3	4	2	2	1.6	0.4	1.6
Appendicitis 121	12	9	3	5.2	2.6	3.5	11	7	4	4.3	2.4	6.3
Hernia and intestinal obstruction 122	14	8	6	6.1	8.7	4.8	21	10	11	8.2	3.5	5.5
Cirrhosis of the liver 124	7	5	2	3.0	3.9	2.6	11	10	1	4.3	3.9	5.1
Nephritis, all forms 130-132	146	73	73	63.4	72.1	79.8	172	90	82	67.5	65.5	64.6
Diseases of puerperal state 140-150	15	10	5	20.4	22.0	29.7	13	8	5	17.0	33.5	32.5
Puerperal septicemia 140, 142a, 147	4	3	1	5.4	5.5	11.0	2	2		2.6	6.7	6.5
Suicide 163-164	19	16	3	8.2	5.6	3.1	14	13	1	5.5	8.6	6.3
Homicide 165-168	29	4	25	12.6	12.6	10.1	23	9	14	9.0	9.4	9.9
Accidental deaths (exclusive of motor vehicle 169, 171-195)	94	49	45	40.8	41.7	53.1	128	75	53	50.2	39.6	45.2
Motor vehicle 170	47	39	8	20.4	22.1	12.3	44	30	14	17.3	27.1	14.3
All other known causes	296	176	120	128.5	123.8	131.6	324	198	126	127.1	113.0	128.0
Ill-defined and unknown causes 199-200	194	70	124	84.2	78.2	83.3	184	45	139	72.2	61.6	70.1

**Not available.

*Birth and death rates per 1,000 population; stillbirths per 1,000 live births; deaths from specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the February and March reports of the years specified, using the mid-year estimated population.

Benadryl—Treatment of urticaria and allied dermatoses should begin with small doses of Benadryl, such as 50 mg. administered three times a day. The amount should be increased gradually until the minimal maintenance dose has been determined. Conversely, patients may require 300 to 400 mg. of the drug a day for several weeks but frequently are able to decrease the amount gradually until smaller doses become equally effective.

Benadryl does not seem to exert a cumulative action, for urticarial lesions promptly reappear when administration of the drug ceases.—O'Leary and Farber, J. A. M. A., July 19, 1947.

Anemia in Infants—Anemia in infancy is predominantly due to iron deficiency, and the red blood cells become deficient in hemoglobin (hypochromic) and smaller (microcytic) than normal. The obvious primary therapeutic consideration is the correction of the deficiency state by the administration of iron to the infant. On a purely theoretic basis other materials needed for hemoglobin synthesis may be lacking (protein, pigments such as chlorophyll, copper and other trace elements). Inference drawn from animal experimentation would support such a possibility. Such evidence, however, does not justify numerous shotgun proprietary preparations.—Poncher, J. A. M. A., July 19, 1947.

BOOK ABSTRACTS AND REVIEWS

Principles and Practice of Obstetrics. By Joseph B. DeLee, M. D., Late Professor of Obstetrics and Gynecology, the University of Chicago; Consultant in Obstetrics, the Chicago Lying-In Hospital and Dispensary; and J. P. Greenhill, M. D., Attending Obstetrician and Gynecologist, the Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, the Chicago Lying-In Hospital; Chairman, Department of Gynecology, Cook County Hospital; Professor of Gynecology, Cook County Graduate School of Medicine. 9th edition. Cloth. Price, \$10.00. Pp. 1011, with 1,108 illustrations, 211 in color. Philadelphia: W. B. Saunders Company, 1947.

This is the latest edition of one of the standard textbooks of obstetrics which has been a favorite of practitioners and teachers since the first edition was published in 1913. By numerous revisions the late Dr. DeLee maintained the text as timely and all-inclusive as a textbook can be. This is the second edition published by Dr. Greenhill since Dr. DeLee's death.

In this edition, five new chapters have been added. Practically the entire text has been rewritten and much new material is included. All of the material has been brought up to date. The bibliographies contain frequent references to data published within the last year. The new chapters are as follows: Minor Disturbances of Pregnancy; Premature Labor, Prolonged Labor, Prolonged Pregnancy or Post-Maturity and Missed Labor; Fetal Erythroblastosis; Care of Premature Babies, and Circumcision.

Many changes and additions have been made to the sections on diseases of the blood, surgical operations, hyperemesis gravidarum, toxemias, postpartum hemorrhage, placenta accreta, and German measles in pregnancy. Reasonably complete discussions of the newer knowledge of obstetrics is included, such as the Rh factor, obstetric analgesia and anesthesia (including demerol, pentothal, and caudal anesthesia) and penicillin.

This book is adequately illustrated throughout and most of the pictures are simple, yet instructive. There are 1,108 illustrations in all, 211 of which are in color. There are a few photographs in color. Instead of being printed in a wide single column format the book is presented in a new two column format, which is said to make for improved readability and greater utility.

Six pages are devoted to the use of caudal anesthesia in the conduct of labor. The technique of administration is illustrated and discussed in detail. Greenhill gives a frank statement of his opinion of continuous caudal analgesia: "... there is no more satisfactory and pleasant type of analgesia in obstetrics. However, because of the definite even though slight risk of death ..., continuous caudal analgesia should have a restricted field of usefulness ... There is no need

to employ it for the average woman in labor because most of the pain of labor ... can be relieved by less harmful drugs and anesthetics."

The chapter on Fetal Erythroblastosis and the Rh factor contains seven pages. The pathology, diagnosis, etiology, prevention and treatment of erythroblastosis are described in detail, especially in relation to the newer knowledge of the Rh factor.

All features of obstetrics are thoroughly covered in this text and it is certainly comprehensive. For many conditions, several methods of treatment are given and the author frequently advises different methods for the specialist on the one hand and the general practitioner on the other. The conservative approach is repeatedly advised and the reader is often reminded of the importance of keeping blood loss at a minimum.

By the use of profuse illustrations and a simple intelligible style of writing, the author has produced a book which is most instructive and easy to read and understand. As a guide for all obstetricians, this is an excellent book, but the basic teachings in it are the same as in the previous editions, plus the five new chapters mentioned above. For the general practitioner or specialist who desires that a book on obstetrics be comprehensive and modern yet still have stood the test of time, this book is strongly recommended.

Joe W. Perry, M. D.

Medical Uses of Soap. A symposium. By G. Thomas Halberstadt, B. S., Ch. E., Marion B. Sulzberger, M. D., Theodore Cornbleet, M. D., Lester Hollander, M. D., C. Guy Lane, M. D., Daniel J. Kooyman, Ph. D., Rudolf L. Baer, M. D., Carey McCord, M. D., Morris Fishbein, M. D., and Irvin H. Blank, M. D. Cloth. Price, \$3.00. Pp. 182 with 41 illustrations. Philadelphia, London and Montreal: J. B. Lippincott Company, 1946.

This book is a collection of articles dealing with the medical uses of soap. It is a symposium written by several physicians and chemists and, since the articles were written independently of one another, there necessarily results some duplication of material. There is a very interesting chapter on the chemistry and manufacture of soap, while other chapters deal with the effects of soap on normal skin, the harmful effects of excessive use of soap, the effects of soap in certain diseases of the skin and hair, the use of soap in industry, and a scientific evaluation of the effects of soaps in shaving.

There is also a brief discussion of some of the wetting agents which serve as a substitute for soap and of the various added ingredients which either increase penetration or add color or odor to soap.

It was in 1931 that Doctor John E. Walker, then of Opelika, published in the *Journal of the*

American Medical Association, an article on the germicidal and therapeutic applications of soap. Since that time wet dressings consisting of soapy water have been used frequently by us in the treatment of paronychia and cellulitis. Soap is also playing an important part in our treatment of impetigo. Occasionally we have encountered cases of contact dermatitis due to soap or specific brands of soap and this substance must be considered as a possible factor in all cases of contact dermatitis involving the hands and face.

This book was widely distributed through the kindness of Proctor and Gamble to many of the physicians throughout the state. Those who do not possess a copy might find considerable information of value in the treatment and prevention of many of the common diseases of the skin and scalp.

Clarence K. Weil, M. D.

The Compleat Pediatrician. By Wilburt C. Davison, M. A., D. Sc., M. D. Fifth edition. Cloth. Price, \$3.75. Pp. 256. Durham, N. C.: Duke University Press, 1947.

This excellent reference book on pediatrics has been brought up to date in a thorough-going manner. The chief changes have been in the revision of the therapeutic sections to include the latest advances in treatment. Adequate space is given to penicillin, streptomycin, and the sulfonamide drugs.

Also the section on growth development and child care has been rewritten to provide for recent acquisitions to our knowledge of child development.

This is a volume to be used as a reference book. It contains almost everything necessary for the diagnosis and treatment of any condition found in children. It is one of the very few real bargains to be found in this period of inflation, and is indeed what its title indicates.

J. Sam Smith, M. D.

A Textbook of Medicine. Edited by Russell L. Cecil, A. B., M. D., Sc. D., Professor of Clinical Medicine, Cornell University Medical College; Consulting Physician, New York and Veterans' Hospitals; Visiting Physician, Bellevue Hospital, New York City. With the assistance of Walsh McDermott, M. D., Associate Professor of Medicine, Cornell University Medical College, Associate Editor for Diseases of the Nervous System, and Harold G. Wolff, M. D., Associate Professor of Neurology, Cornell University Medical College. Seventh edition. Cloth. Price, \$10.00. Pp. 1730, with 244 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

In reviewing the early edition of Cecil's *Practice of Medicine*, I was somewhat critical, pointing out the fact that too much space was devoted to diseases that were rare while many important details were lacking in the chapters dealing with diseases frequently encountered in practice. I felt that the book had not been well coordinated. I take pleasure in stating that, in my opinion, subsequent editions have corrected this defect. I also made the criticism that the lack of illustra-

tions detracted from the value of the book in the capacity of a textbook for medical students since no description can possibly take the place of a good illustration. Later editions have been illustrated but one would hardly say that the book was profusely illustrated. This criticism, therefore, still holds true in the case of the present edition but the internist, practitioner, or graduate student who already has a visual picture of the majority of clinical entities, will not require illustrations to supplement the text.

The contributors to this, the seventh, edition of Cecil's "Medicine" look like a "Who's Who" in medicine. The following partial list includes only those contributors whose names and scientific contributions are familiar to the reviewer: Alexander, Alvarez, Astwood, Baehr, Barach, Blake, Castle, Cecil, Cook, Crohn, Eggleston, Faust, Frothingham, Globus, Hench, Keefer, Krumhaar, Longcope, Meleney, Minot, Ochsner, Paullin, Plummer, Rackeman, Reiman, Riley, Spies, Spink, Sturgess, Whipple, White, Wolbach and Youmans. Every contributor is a teacher with clinic connections with an outstanding medical college or a recognized teaching hospital.

The revision of an edition of any medical text is particularly difficult during war time when many of the contributors are scattered to far corners of the globe and is a task to be accomplished only with great effort and cooperation. The successful completion of this revision under unfavorable circumstances reflects credit on the editor, the contributors, and the publishers.

Among the new subjects included in the present edition are the following: drug allergy, vitamin A deficiency, vitamin E deficiency, vitamin K deficiency, hypervitaminosis, headache and psychosomatic medicine. A large number of new contributors have been called to take the place of those who have retired or are deceased since the sixth edition. Over 50 new subjects have been written by these new contributors.

In the reviewer's opinion, Cecil's *Medicine* now stands out as an ideal reference book for practitioners of medicine, covering, as it does, thoroughly but briefly, every medical condition which the practicing physician may expect to encounter.

Clarence K. Weil, M. D.

Allergy in Theory and Practice. By Robert A. Cooke, M. D., Sc. D., F. A. C. P., Attending Physician and Director of the Department of Allergy, the Roosevelt Hospital, New York City. Cloth. Price, \$8.00. Pp. 572, with 43 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

Frequently an author, in his introduction to a book, makes a statement as to the purpose for which it was written. Unless he succeeds in writing the type of book that he describes in his own preface, the purchaser of the book is very likely to be confused and to buy a book for which he will have little use. Cooke makes the statement that his book is written both for the "general practitioner and student of allergy," as well as

the scientifically minded who find allergy an alluring subject on account of the intricacies of its immunologic processes. Many other books have been written on the subject of allergy and these fall into three general classes: those intended as a guide to the patient, those planned for the beginner in the field of allergy, and, finally, those written for the expert. The latter type of book is more likely to represent the author's point of view without regard for divergent opinions as it is assumed that the reader is capable of evaluating the information in accordance with its own experience.

By these standards Cooke has attempted an extremely difficult task when he started out to write a book for readers with such varying amounts of knowledge in the field of allergy. There are a few who are not already familiar with the principles underlying the allergic manifestations who will succeed in reading the first 100 pages devoted to this phase of the subject. The author also has presented the viewpoint of the New York group which differs in many aspects from that of other allergists throughout the country. Thus, the inexperienced will find a one-sided point of view.

Those who are already familiar with the subject will read the book with interest, realizing that it is an attempt to present a single point of view and this information may influence the thinking of those who have already come to definite conclusions of their own. Cooke's chapter on infective asthma is rather confusing but he handles the subject of allergic dermatitis in an extremely elusive manner. Spain's chapter on non-infective asthma and Schwartz's contribution on extrinsic allergic dermatitis is outstanding. In the description of pollenosis little is written about any of the pollens encountered outside of the vicinity of New York City. This is a distinct disadvantage to the practitioner outside of the metropolitan area.

The specialist in the field of allergy will find this book of value as an addition to his literature on the subject but, in my opinion, the book will prove unpopular among students of medicine and general practitioners. I have heard salesmen recommend this book to general practitioners as an excellent one to familiarize them with this field of medicine. I do not feel that this is a fair statement and believe that most physicians who are not already familiar with the subject should purchase some other volume which is clearer in its presentation, presents a more generally accepted point of view and devotes less space to problems that still remain in the field of scientific research.

Clarence K. Weil, M. D.

Diseases of the Chest: With Emphasis on X-Ray Diagnosis. By Eli H. Rubin, M. D., F. A. C. P., F. C. C. P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-Charge, Chest Clinic, Morrisania City Hospital, New York.

Cloth. Price, \$12.00. Pp. 685, with 355 illustrations (24 plates in color). Philadelphia and London: W. B. Saunders Company, 1947.

The reviewer recommends this book to every physician interested in diseases of the chest—to the general practitioner, the internist, the phthisiologist and the roentgenologist. It is a book written for the practitioner and contains nothing that is not extremely practical and useful. As its title suggests, it covers the subject of diseases of the chest with special emphasis on x-ray diagnosis. The author is the first one who, so far as I know, has had the nerve to call attention to the unreliability of physical signs in the diagnosis of diseases of the chest and to emphasize the fundamental value of the chest x-ray. The first section describes the anatomy of the chest and its contents, especially from the standpoint of roentgenology, the physiology of the lungs in health and disease and the symptoms and signs of pulmonary pathology. The second section deals with pneumonia classified on an etiologic basis, the various bacterial infections of the lung and pneumonitis due to viruses, fungi and chemical irritants. The third section deals with tuberculosis, its course, the various types of tuberculosis in humans, the diagnosis, complications and treatment of tuberculosis, including modern surgical procedures. The fourth section deals with diseases of the bronchi: bronchial obstruction, bronchiectasis, emphysema and asthma, and with the various types of pulmonary and pleural neoplasms, both primary and metastatic. The fifth section deals with diseases of the mediastinum, pleura, diaphragm, and of the heart, insofar as these diseases affect the lungs. The sixth section is devoted to principles of surgical treatment with detailed descriptions of surgical procedure.

The book is written tersely with the object of conveying practical facts. It is well printed in large readable type and profusely illustrated with x-ray findings and color reproductions of various pathologic conditions. In my opinion, the book deserves a four-star rating.

Clarence K. Weil, M. D.

Ovarian Sterility—Sterility resulting from early or late primary ovarian failure has a very poor outlook for salvage, but it is in these conditions that prophylaxis can play a great part. Much of the early type is preventable by proper attention to the menstrual behavior and endocrin and constitutional status of the girl, since a slight deficiency later becoming a major threat to fertility can often be easily managed during adolescence. Other measures helpful in avoiding late primary failure are the teaching of intelligent sex hygiene, control of venereal disease, premarital advice, including practical instruction in contraceptive methods, and the avoidance of all unnecessary pelvic operations. Although there is a great deal of value in attention to such factors, by far the most arresting possibilities are in the endocrine aspects of sterility.—*Stickney, New Orleans M. & S. J., July '47.*

AMERICAN MEDICAL ASSOCIATION NEWS

EDITORIAL BRANDS ARTICLE ON DOCTOR SHORTAGE AS "NONSENSE"

MORE THAN 7,000 EXTRA DOCTORS PRODUCED DURING WAR; NOW EMPHASIS PLACED ON QUALITY RATHER THAN QUANTITY

The reason for the cessation of the accelerated program in most medical schools and the reduction in freshman enrollments to prewar levels, according to an editorial in the June 28 issue of *The Journal of the American Medical Association*, is that "medical educators were not doing as good a job of training physicians during the war as is now desired."

The *Journal* states that "more than 7,000 extra doctors were produced during the war. This was necessary. In many schools, facilities and strength of faculty now do not warrant maintenance of large enrollments or an accelerated program, without a serious sacrifice of high quality. Numbers can never replace quality, especially in medicine."

The editorial says in full:

Recently a national periodical—*Collier's*—published a misleading article by Albert Maisel entitled "So You Can't Get a Doctor!" This long and somewhat confused statement purports to demonstrate that there is an acute shortage of doctors in this country and that deans of medical schools are callous to this alleged need, as shown by termination of the accelerated program in most schools and the reduction in freshman enrolments to prewar levels.

Much of the material in this article is sheer nonsense. The author begins with a partial quotation from a publication of the American Medical Association, taken out of its context, predicting a postwar shortage of doctors. Actually this estimate was made when the end of the war seemed far distant and the military authorities were refusing to allow able bodied men to enter premedical studies. The figures quoted were based on military estimates of the physician need for a large peacetime army and navy, universal military training and a staff for the Veterans Administration three times the number now actually employed. Only a fraction of the anticipated number of physicians is now employed in these services.

While contending that maldistribution of doctors is not the major factor in the alleged shortage, Maisel selects as outstanding examples of shortages two states with per capita incomes well below the national average, and—of all places—Kelley's Island, four miles out in Lake Erie! The evidence for shortages even in large cities is based on replies to telegrams asking whether there exists in large cities a "surplus of physicians available for transfer elsewhere . . ." No wonder negative replies were received from 15 cities. Even where a surplus might exist, physicians are not "available for transfer" to a place to which they do not choose to go any more than are engineers or day laborers.

Whether or not there is a real shortage of doctors requires a far more careful study than the mere sending of a few telegrams. Such studies are under way in several states and in the country at large. The population of physicians in this country has increased somewhat more rapidly than the population at large in the past 20 years. Whether or not there is a real shortage, some maldistribution prevails and redistribution is extremely difficult in a democracy. Men are free to work in a place where there are facilities for good work, such as hospitals and diagnostic equipment, stimulating professional and educational contacts and reasonable good family living conditions, and where a reasonably good income is possible.

There is close correlation between the per capita income of states or counties and the numbers of physicians who locate in any area. Such location is insignificantly affected by establishing more medical schools, increasing enrollments or accelerating the curriculum. More promising are the efforts now being made: the provision of hospital and diagnostic facilities under the Hospital Survey and Construction Act, the extension of prepaid medical care insurance, the strengthening of the status of the general practitioner, the information service on areas needing physicians, the intimate liaison of organized medicine with farm organizations, and similar considerations.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

September 1947

No. 3

SURGICAL MANAGEMENT OF GASTRIC AND DUODENAL ULCERS

O. THERON CLAGETT, M. D.

Division of Surgery
Mayo Clinic

Rochester, Minnesota

The surgical treatment of gastric and duodenal ulcers has been discussed so often that it is unlikely that anything very new can be presented. However, since these lesions occur so very frequently and their management presents problems of concern to us all, it may be worth while to review and reconsider the problem occasionally. An evaluation of vagotomy in the treatment of ulcers of the stomach and duodenum is particularly pertinent in view of the favor with which this operation is now regarded. Certainly we shall all admit that the ulcer question is not a closed book and there are many problems worthy of our consideration. Before entering the discussion I should like to establish the point that gastric ulcer and duodenal ulcer, while similar in some respects, are very different diseases. This is particularly true as regards treatment and I shall discuss them separately.

DUODENAL ULCER

Duodenal ulcer is a common disease. It is a serious disease because it is so chronic, so disabling, so economically wasteful and because some of its complications are so dangerous to life itself. Its proper management is a very difficult problem in many cases. Primarily, I believe that duodenal ulcer is a medical disease rather than a surgical one. So much has been written and said about the surgical treatment of duodenal

ulcer that it is often considered a surgical disease. Pulmonary tuberculosis, which is usually considered to be a medical disease, is actually much more of a surgical disease than duodenal ulcer. Surgical intervention is required in the treatment of from 50 to 80 per cent of patients with tuberculosis in most sanatoriums, while only about 20 per cent of patients with duodenal ulcer require surgical treatment. Granted that the medical treatment of ulcer leaves much to be desired, it is still preferable to surgical treatment of uncomplicated duodenal ulcer. Surgical procedures are necessary for the treatment of complications of duodenal ulcer but I think surgeons should admit frankly that as yet they do not have a really satisfactory operation for the treatment of duodenal ulcer itself. We have operations that will take care of the ulcer that is present but apparently none of our present operations will completely control all of the ulcer-producing factors present in all patients. This statement may not be completely true as regards vagotomy but it must be pointed out that this procedure has not been fully evaluated as yet. Several types of operations for duodenal ulcer have apparently given good results in the early postoperative period but have been condemned after an extended follow-up. I cannot discuss the medical management of duodenal ulcer at this time.

What are the indications for surgical treatment of duodenal ulcer? There are four complications of duodenal ulcer which

require consideration of surgical intervention: (1) perforation, (2) hemorrhage, (3) obstruction and (4) ulcer intractable to medical management. I shall discuss each one separately.

Acute perforation of a duodenal ulcer constitutes a surgical emergency. Usually it is not difficult to make the diagnosis. Rarely, acute perforation occurs without preceding ulcer distress but usually a history characteristic of ulcer can be elicited and often the symptoms indicate a recent exacerbation in the severity of the ulcer symptoms. Roentgenographic evidence of air in the peritoneal cavity may be present but the surgeon should not insist on this examination if the history and physical examination indicate an acute surgical lesion of the abdomen.

The surgical treatment of acute perforation should be simple closure of the perforation. This can be accomplished in a number of ways. As a rule, the simpler the closure, the better. Two or three sutures will usually suffice for closure. Omentum should be sutured down over the site of the closure for additional protection. Whether the peritoneal cavity should be drained or not is a debatable question. If there has been considerable leakage and soiling of the peritoneal cavity I prefer to insert some drains. Drainage tubes placed in the subphrenic space and down to Morison's pouch may prevent complications.

Only rarely should anything more than simple closure be attempted. If there is evidence of duodenal obstruction it may be necessary to perform gastro-enterostomy at the time the perforation is closed. I cannot agree with some of the recent literature that advocates subtotal gastrectomy for the treatment of acute duodenal perforation. A patient who has acute perforation is too ill to submit to such an extensive procedure and the added risk more than counterbalances any possible benefit. In our experience at the Mayo Clinic, only about 20 per cent of patients who have had acute perforation have ever required subsequent surgical treatment of the ulcer. The hazards of attempting gastrectomy are considerable. The closure of the duodenal stump is the greatest source of complications in any gastric resection. The difficulty of obtaining a safe closure of the duodenal stump in the presence of the acute inflammation and with friability of

the tissues present under the circumstances of an acute perforation is obvious. Furthermore, operation for acute perforation must very often be performed when there is neither equipment nor trained personnel adequate to attempt resection.

Hemorrhage from a duodenal ulcer may be a very serious complication, particularly in older patients. Fatal hemorrhage from ulcer in a person less than forty years of age is very rare and, unless the hemorrhage is repeated, it is not necessarily an indication for surgical intervention. As a general rule, I feel that if a patient of any age has more than two hemorrhages surgical treatment is required. If the patient is more than forty years of age, one severe hemorrhage from a duodenal ulcer is sufficient to justify operation in some instances. It is well known that older persons are prone to have more serious and even fatal hemorrhages. If possible, operation should be performed after the patient has recovered to a large extent from the hemorrhage. It is very dangerous to operate on a patient who is bleeding badly. This is particularly true if operation is not undertaken until the patient is badly exsanguinated and is bordering on shock. Regardless of the amount of blood given during the operation these patients tolerate surgical intervention very poorly.

The treatment of choice is subtotal gastrectomy. The resection should include about three-fifths to two-thirds of the stomach. I do not believe resection of a larger amount of stomach will provide enough additional protection against recurrent ulceration to justify the increased risk and disability incident to a more extensive resection. It is obligatory that the pyloric ring be included in the resection.

The ulcer itself does not need to be removed unless it is bleeding actively at the time of operation. As a matter of fact, I do not believe that most duodenal ulcers should be excised. The ulcer will heal promptly once the gastric contents are diverted from it. In many instances efforts to remove the ulcer are dangerous. The presence of a duodenal ulcer produces a marked shortening of the duodenum. While the normal distance from the pyloric ring to the papilla of Vater is 7 to 9 cm., the presence of an ulcer can shorten this distance to 2 or 3 cm. Any

attempt to remove the ulcer itself will jeopardize seriously the ampulla of Vater.

I do not believe it matters a great deal what type of anastomosis of the stomach to the jejunum is used. I prefer a posterior Hofmeister-Polya type whenever possible but I do not hesitate to make the anastomosis anterior to the colon if the mesocolon is short and fat or if the arcades are not large enough to permit a posterior anastomosis. I believe the Hofmeister modification of the Polya operation has many advantages. It is possible to carry the resection to a higher level on the lesser curvature and still have plenty of stomach remaining for an easy anastomosis. The Hofmeister technic narrows the outlet of the stomach so that food is not dumped into the jejunum so rapidly. It is unusual to have the serious "dumping syndrome" symptoms of nausea and faintness after eating, when this technic is used. Furthermore, Comfort and Wollaeger¹ in careful nutritional studies have shown that patients who have undergone the Hofmeister-Polya operation are able to digest and absorb their food better than patients who have had the entire end of the stomach anastomosed to the jejunum. In the Hofmeister modification the anastomosis is only a little larger than the normal duodenal outlet.

Obstruction of the outlet of the stomach due to duodenal ulcer may result from spasm and respond to medical treatment; however, in most instances it is due to excessive scar formation around the ulcer, narrowing the duodenum until it will not permit normal emptying of the stomach. This type of obstruction requires surgical treatment for its relief and operation should be performed before the patient has lost an excessive amount of weight and has become seriously debilitated. It is always well to check the chemical composition of the blood carefully before operation on such a patient and to spend a few days preparing the patient for operation with repeated gastric lavage and with intravenous administration of fluids to restore the patient to the best possible condition for operation. It should be remembered that gastro-enterostomy is an operation that can be used to good advantage for many of these patients. Gastro-enterostomy

has been condemned but there is still a place for it. If the ulcer is not active and the concentration of acid is low, a good result can be anticipated without danger of recurrent ulcer. If the ulcer is active and there is a large inflammatory mass around the duodenum, gastro-enterostomy may be better than attempting a hazardous closure of the duodenal stump.

A patient whose ulcer symptoms are completely intractable to medical management usually has an ulcer on the posterior wall of the duodenum perforating into the pancreas. The pain under these circumstances may be intolerable and surgical intervention may be justified even in the absence of bleeding, acute perforation or obstruction. The treatment of choice is subtotal gastrectomy. Here again closure of the duodenal stump may be a little difficult. Certainly it is unwise to attempt to dig these ulcers out of the pancreas. The ulcer should be left in place. The anterior wall of the duodenum is usually free of reaction in these cases and satisfactory closure is obtained by turning the duodenal stump into the head of the pancreas.

Thus far I have not mentioned vagotomy for the treatment of any of these surgical complications of duodenal ulcer. Frankly I do not know as yet just where this procedure fits into our armamentarium in the treatment of ulcer. Certainly it cannot be used for the treatment of acute perforations or obstruction.

I have been tremendously interested, as we all have, in the renewed consideration of this procedure. I say renewed because it is not a new idea. Vagotomy for the treatment of ulcer had been considered by a number of investigators in the past. The procedure had been performed on patients, and extensive animal investigations have been carried out. Dragstedt² and others who have followed his lead deserve great credit for the work they have done in trying to find a better treatment for duodenal ulcer. Certainly we need a better method of treatment than we now have. Dragstedt is a sound investigator; he is an outstanding physiologist and has had a wide experience in clinical surgery. Much of his work has been confirmed by other investigators.

1. Comfort, M. W., and Wollaeger, E. E.: Personal communication to the author.

2. Dragstedt, L. R.: Personal communication to the author.

This question of vagotomy for duodenal ulcer demands our attention. Even if we wanted to, we could not avoid it, for ulcer patients know about the operation and are asking for it. We certainly do not want to deny sufferers from ulcer the benefit of anything we can do for them. We must admit that our older methods of treatment are not entirely satisfactory. Then what are we going to do about vagotomy? Speaking for myself alone, I am going to go slow. Maybe I am being too conservative. I hope I am. I hope that this procedure will prove to be the answer we have been waiting for. But I am not yet convinced that it is. So many procedures have been suggested and attempted for the treatment of duodenal ulcer: gastro-enterostomy, pyloroplasty, gastrectomy and grafts of jejunum to the stomach, to mention a few. All looked good at first. The early reports were favorable but when the patients were followed over a longer period the failure of all of these procedures in at least some instances became apparent. Subtotal gastrectomy seems to be the best surgical procedure we have been able to offer so far but it is followed by recurrent ulcer in a disturbing number of instances. I am afraid that history will repeat itself in the case of vagotomy. Some of the experiments on animals support this view. Already I personally know of two cases in which duodenal ulcers have gone on to perforate after vagotomy. There have been other untoward effects of vagotomy, such as gastric retention, diarrhea and so forth.

Another thing worries me about the present enthusiasm for vagotomy. It is such an easy and relatively safe technical procedure, as far as the operation itself is concerned, that I am afraid that surgeons who have not had the proper training or experience will be tempted to try this procedure perhaps in patients poorly selected for the operation. Poor results under such circumstances will tend to discredit the procedure.

Whether vagotomy should be performed through the thorax or the abdomen is debatable. The thoracic route is undoubtedly easier technically and probably both nerves and all their branches can be severed with greater facility. However, the abdominal approach permits an exploration of the lesion not possible by the thoracic route and in general, I believe, is preferable.

For the present I think the best indication for vagotomy is the occasional gastrojejunal ulcer that has developed after an adequate subtotal gastrectomy. Vagotomy can be used to good advantage under these circumstances. For other indications I would rather wait until the patients who have already undergone vagotomy have been followed over a longer period. We should not forget that many patients have had perfect health for five, ten and fifteen years after gastro-enterostomy or gastric resection before gastrojejunal ulcer developed. We cannot accurately evaluate vagotomy for several more years.

GASTRIC ULCER

As I mentioned earlier, gastric ulcer is a very different problem from duodenal ulcer. Although the symptoms may be similar and the medical management is approximately the same, gastric ulcer is primarily a surgical disease, whereas duodenal ulcer is primarily a medical disease. I am not going to enter a controversy as to whether benign gastric ulcers become malignant or are ulcerating carcinomas from their origin. I am sure that experience has demonstrated conclusively that all ulcerating gastric lesions must be looked on with great concern, since they may be or may become malignant. There are many ulcerating gastric lesions in which it is impossible to determine by roentgenologic examination, by gastroscopy, by any clinical or laboratory test, by palpation at the time of operation or even by macroscopic examination of the resected lesion whether the lesion is benign or malignant. Only careful microscopic study of sections taken from several parts of the lesion will provide accurate diagnosis of these lesions.

Because this is true and because the risk of resection for gastric ulcer is so low (less than 1 per cent), I believe we are justified in advising operation on every patient who has an ulcerating lesion of the stomach; provided, of course, the patient's general condition will permit operation. I believe that from every standpoint early surgical removal of such lesions is preferable to a trial of medical treatment before advising operation. From an economic standpoint the length of hospitalization and disability is not much greater for operation than for proper medical treatment. When the lesion

is removed surgically, the patient is immediately relieved of his disease. The results of gastric resection for gastric ulcer are among the best in all surgery. When treated medically the patient must follow a rigid dietary regimen and must report back for roentgenologic examination at frequent intervals. Often after a trial of medical treatment it is still necessary to resort to gastrectomy and in those cases in which the lesion proves to be malignant the best opportunity to cure the patient has been lost by this unnecessary delay. When one considers the impossibility of making an accurate clinical diagnosis of ulcerating gastric lesions, the danger of these lesions being malignant and the benefits to be gained at minimal risk by surgical treatment, I believe this aggressive attitude toward ulcerating gastric lesions is justified.

The operation of choice for most gastric ulcers is resection of the ulcer and the portion of the stomach distal to it, including the pylorus. The procedure commonly used is the Polya type resection or one of its modifications. I prefer the Schoemaker modification of the Billroth I operation. In this operation the resection can be carried out as high as necessary on the lesser curvature. (I have resected ulcers at the esophagogastric junction.) An oblique closure of the lesser curvature portion of the end of the stomach is carried out and the greater curvature portion of the end of the stomach is anastomosed to the end of the duodenum. It is perfectly possible to resect as much as three-fourths of the stomach by this technic and still perform anastomosis to the duodenum. The Schoemaker operation is not performed commonly and its advantages are not appreciated generally. It provides adequate resection of almost any ulcerating gastric lesion with restoration of normal gastroduodenal continuity. It is an easier operation to perform than the Polya type because closure of the duodenal stump is avoided and it is not necessary to disturb the mesocolon. With normal gastroduodenal continuity there is normal mixing of food with the biliary and pancreatic juices and digestion is normal and efficient. The small gastric outlet prevents the dumping syndrome. Comfort and Wollaeger have shown that from a nutritional standpoint the Schoemaker procedure is by far the most effective

of all types of gastric resection. The operation has not been widely used because it has been felt that the technic would not permit adequate resection of the lesion and because leakage at the angle where the closure of the lesser curvature and the anastomosis to the duodenum came together was feared. At the clinic we have not had any difficulty with the operation. Provided the duodenum is reasonably mobile, as it usually is in cases of gastric ulcer, the operation does not present any difficulties.

Vagotomy is definitely contraindicated in the treatment of gastric ulcer. The results of gastrectomy are excellent. The danger of the lesion being malignant is too great to warrant vagotomy.

CONCLUSIONS

Uncomplicated duodenal ulcer is a medical disease. Complications of duodenal ulcer, such as perforation, hemorrhage, obstruction and intractability, are indications for surgical intervention. Simple closure of the ulcer is the treatment of choice for acute perforations. Bleeding and intractable ulcers are best treated by subtotal gastrectomy. The Hofmeister-Polya operation is preferred. Obstructing ulcers may be treated by gastro-enterostomy or subtotal gastrectomy. The place of vagotomy in the treatment of ulcer is not established. Gastroduodenal ulcer after gastrectomy is the best indication for vagotomy at present.

Gastric ulcer is a surgical disease. Early resection of ulcerating gastric lesions is the treatment of choice. A Schoemaker-Billroth I type of operation is preferred.

Early Ambulation—It is our feeling that one should either practice early ambulation on a patient or not; i. e., the patient should be gotten up early, not later than the third day, or he should be held down until any clot which may have formed is tightly attached to the vein in which it forms. In other words, we feel that to temporize and allow the patient up on the fifth or sixth day is more hazardous than earlier or later. We would like to suggest to you who have not tried early ambulation that you get part of your patients up early, start on your sturdy adults with less serious operations and feel your way along.

There are certain contraindications to early ambulation; namely, shock, debility, serious infection and other complications which in themselves require bed rest.—*Davison et al., J. M. A. Georgia, August '47.*

THE FALLACY OF THE CONJOINED TENDON
THE ETIOLOGY AND REPAIR OF INGUINAL HERNIA
STEPHEN A. ZIEMAN, M. A., M. D., F. A. C. S., F. I. C. S.

Mobile, Alabama

W. J. M. Brandon¹ recently wrote an analogy which brilliantly summarizes the hernia situation. He entitled it "The House That Bassini Built." Once upon a time, he says, a man called Bassini built a beautiful house on the side of a hill. It soon became the envy and admiration of everyone, but for some reason this house kept falling down and had to be rebuilt over and over again.

Now Bassini suffered from no lack of helpful advisors. Some of his brother architects reinforced the walls for him; some introduced new and indestructible material; some redesigned the house completely, making it so complicated that onlookers were unable to understand it and naturally considered it a great advance. A few rebuilt it from within outward, thinking that the hard way would make it harder for it to fall down. Others paid little attention to the designs of the master builder and thus produced new and original methods in enormous quantities; but, to the amazement of everyone, the house continued to fall down.

As time went on a great many people became interested in this house because there were a lot of houses to be built, and a house like this one should last its owner a lifetime. The onlookers, however, became confused by the dissension among the builders, and a certain blindness that seemed to affect them. Each group was unable to see the ruins of their own house, however often it fell down, yet, when others failed with the same design, they decided that the workmanship must have been bad, and offered correspondence courses on how it ought to be done.

Now a certain simple fellow who had rebuilt his own house many times with no one to help him viewed the strife from afar and pondered it as follows: "Strengthening the walls does not stop a house from falling

down; binding the walls with indestructible materials does not seem to help; even silver spires are of no avail except to improve appearance. Moreover, learned discussions on the merits of the different kinds of mortar and cement have little effect upon the results. If the house persists in falling down in spite of having immensely strong walls, it can only mean that the foundations have escaped careful examination."

So it has been with the hernial problem for generations. It is the purpose of this paper to examine with sufficient care the foundations of the hernial question in order that we might arrive at a clearer understanding of the cause and repair of inguinal hernia.

Casual examination of the operative records found in hospitals—that is those records where detailed information is given regarding the operative procedure and method employed—reveals that perhaps 98 per cent of them specify the utilization of the conjoined tendon as an integral part of the hernial repair. Where it is not specified, it would be inferred by the statement that the repair was a modified Bassini type. Now Bassini² stressed the importance of the conjoined tendon; he assiduously directed the suturing of this structure to Poupart's ligament; Halsted³ following in his footsteps required it in the procedure which bears his name. Andrews,⁴ Erdman,⁵ and many other contemporaries incorporate the conjoined tendon in their method of repairing inguinal hernias.

During the greater part of ten years, while I was lecturing on the surgical anatomy of the inguinal region, it was my privilege to dissect a great number of cadavers. The

Read before the Association in annual session, Birmingham, April 14, 1947.

1. Brandon, W. J. M.: Inguinal Hernia, the House that Bassini Built, *Lancet* 1:10, Feb. 10, 1945.

2. Bassini, E.: Spora 100 casi di cura radicale dell' ernia inguinale, operata con metodo dell' autore, *Ital. chir. congr.*, 1888.

3. Halsted, W. S.: Cure of the More Difficult As Well As the Simpler Inguinal Ruptures, *Bull. Johns Hopkins Hosp.* 14: 208, 1903.

4. Andrews, E. W.: *Surg., Gynec. and Obst.* 16: 580, 1913.

5. Erdman, Seward: Inguinal Hernia. Christopher, *Textbook of Surgery*, pp. 1184-1186, fourth edition, 1946.

inability to clearly define the conjoined tendon in the majority of these bodies stimulated research in this direction and 20 cadavers were specially dissected for this purpose. Of the 20 bodies, only 2 specimens possessed a conjoined tendon definitely discernable as a separate and distinct structure. In one of these bodies the conjoined tendon was well defined on the right side, whereas only a few fan-like strands represented the transversus abdominis muscle on the left. Blake,⁶ similarly interested in this problem, dissected 25 normal muscular subjects and in no instance did he find the conjoined tendon to extend more than $\frac{5}{8}$ th of an inch laterally from the insertion of the rectus muscle. Bloodgood⁷ concluded that the structure was too attenuated for its use to be practicable in hernioplasty. The wide structural variation in this part of the body, moreover, has been recently emphasized by Anson and McVay.⁸

In view of these observations, the relative unimportance of the conjoined tendon either as a causative or a corrective agent in inguinal hernia must be concluded. To attribute properties to a structure so inconstant is illogical; to incorporate it as a principal step in the operative technic for the cure of hernia is disastrous.

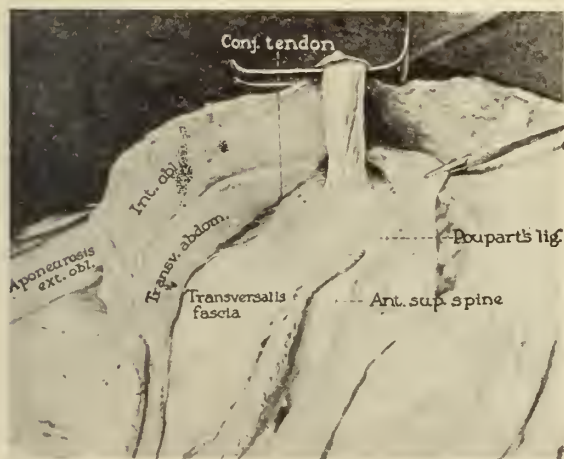


Fig. 1. Anatomic relationship of the inguinal region.

6. Blake, J. A.: The Relative Bearing of the Conjoined Tendon and the Internal Oblique Muscle upon the Radical Cure of Inguinal Hernia, *M. Rec.* 58: 321, 1900.

7. Bloodgood: Inguinal Hernia. Christopher, *Textbook of Surgery*, p. 1187, fourth edition, 1946.

8. Anson, B. J., and McVay, C. B.: Inguinal Hernia, *Surg., Gynec. and Obst.* 66: 186, 1938.

The scientific understanding and repair of hernia are impossible until the surgical anatomy of the inguinal region and the physiology of the constituent parts are agreed upon and their relative values in the production and repair of hernia are assessed. The layers comprising the abdominal wall of the inguinal region are universally accepted as far as skin, superficial fascia, and external and internal oblique muscles are concerned. The remaining layers are a bone of contention and a source of confusion. Loose nomenclature, however, is partly to blame for this confusion, and should be corrected.

There exists a third muscular layer, distinct in every respect from the other layers, and rightfully regarded as a constituent part of the abdominal wall in this region. This layer extends over the lateral abdomen down to the anterior-superior iliac spine; its fibers are directed transversely. Because of this transverse character, the proper nomenclature correctly refers to it as the transversus abdominis muscle. It is emphasized that this muscle is a definite entity and should not be confused with the strong, entirely aponeurotic layer lying beneath it, however intimate and entwining the fascicles appear. The transversus abdominis is muscular in its lateral portion and tendinous in its medial aspect. In this respect it is similar in structure to the overlying internal and external oblique muscles. But from this point on the diversity of opinion bewilders and distracts even the most careful surgical anatomist.

Where the tendonous portion of the transversus abdominis muscle comes in contact with the lateral portion of the internal oblique muscle the continuity is termed the conjoined tendon. In view of the research mentioned in the earlier part of this paper, this union of the two muscles must be regarded as more chance than design inasmuch as in the greater number of instances the tendonous part of the transversus abdominis muscle frays out before reaching the lateral portion of the internal oblique muscle.

Beneath the transversus abdominis muscle, however, there exists a fourth layer, a strong aponeurotic sheath, so intimately associated at times with the transversus abdominis that some have come to regard it as directly or indirectly a part of this mus-

cle. For this reason, the transversus abdominis muscle has been called the transversalis muscle, a term which is obsolete and definitely ambiguous.

This fourth layer is known as the transversalis fascia. It is entirely aponeurotic, lies beneath all of the above mentioned structures, and has connection with the transversus abdominis muscle only because of approximation.

Some intimation of its function may be gathered from the fact that this aponeurotic layer encircles the entire abdominal cavity, reinforcing here, suspending there, restraining in another part, but always investing the peritoneal lining which encases the abdominal viscera. Despite its many local terms, it is one continuous endo-abdominal structure which here in the lower abdomen has acquired the term transversalis fascia. A structure of such comprehensive distribution must have designedly a restraining force. And it is this viewpoint which directs the consideration of factors productive of a hernia.

By definition a hernia is a protrusion of a viscus through any part of the abdominal parietes. It is apparent, then, that the first layer immediately adjacent to the peritoneum must be defective or penetrated before a protrusion of the abdominal contents can be effected. It is therefore, in our opinion, to this layer that we must ultimately resort for the answer to the question of causation and repair of hernia. An intact, strong, resisting transversalis fascia is incompatible with a hernia. No other single structure can replace it. Destroy its continuity, relax its aponeurotic plan, and you have a potential pathologic process.

That the transversalis fascia is an integral part of the inguinal canal is easily demonstrated. The fact that the internal inguinal ring and the infundibuliform covering of the cord are transversalis fascia is not generally appreciated. Relaxation of its cone-shaped fibers permits a protrusion of viscus down the cord. The distribution of the transversalis fascia from Poupart's to Poupart's includes the surgical floor of the inguinal canal. It is immediately apparent that the so-called "weak spot" cannot be attributable to a defective conjoined tendon but rather to a badly relaxed or torn transversalis fascia.

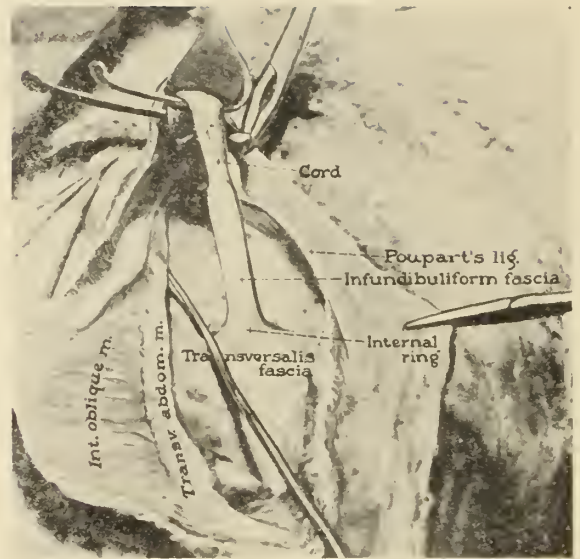


Fig. 2. Indirect hernia with infundibuliform and fascial sac. Note relation of infundibuliform and transversalis fascias.

The cause of direct hernia is equally clear. Defect in the transversalis fascia permits the typical dome-like bulge characteristic of these hernias. The simple closure of the defect by suture constitutes adequate repair for such a hernia irrespective of what is done with the overlying structures by way of reinforcement. No matter how ingenious the latter, neglect the former and disappointment will ensue.

The statement emphasizing the etiologic importance of the transversalis fascia in the causation of a hernia is not intended to discard as unimportant the structures lying upon the transversalis fascia. It is contended that every available tissue is paramount and should be utilized in the repair of hernia. It is emphasized, however, that the transversalis fascia is the structure which rightly should receive foremost consideration in any planned herniorrhaphy.

In indirect hernia of the cord the importance of the transversalis fascia cannot be over-estimated. A short inguinal ligament, a defective, overlapping internal oblique muscle, a napping inguinal "shutter" mechanism, or a relaxed external ring, may influence the occurrence of the pathologic process. These are accidental things, however; they do not pertain to the essential causative principle involved in this type of hernia.

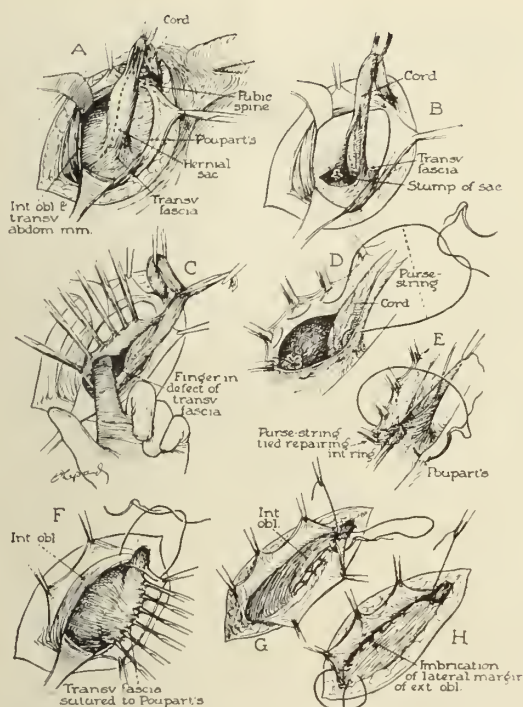


Fig. 3. Serial steps in the author's method of repair for indirect inguinal hernia.

An anatomically perfect transversalis fascia comprising the internal inguinal ring is

inconsistent with a hernia after the dissection, isolation, ligation and excision of the sac involves the reconstruction of the internal inguinal ring. This may be accomplished adequately by a single purse-string suture which includes, besides the fascia, a bit of the cord and Poupart's ligament. The rent in the transversalis fascia is closed by interrupted sutures of chromic catgut and attached to the shelving edge of Poupart's ligament. Thus a second internal inguinal ring is created at the most distal part of the canal without grave interference in the morphologic relationship of this structure. The reconstruction of the external ring is accomplished by fascial imbrication of the lateral margin of the external oblique to the fascia of the internal oblique using a continuous stitch of chromic catgut. The mesial margin of the external oblique is superimposed upon the lateral surface by means of the same continuous stitch. Approximation of the superficial fascia and margins of the skin constitute a method of inguinal repair which has proved eminently successful in several hundred cases.

A WORKABLE CONCEPT FOR THE TREATMENT OF TOXIC THYROID

E. A. HENDERSON, M. D.

Opelika, Alabama

It is our desire to see a further increase in the operability of critically ill patients suffering from toxic thyroid, be it primary or secondary, and the train of complications which almost inevitably lead to the death of the patient. It has been well established that if we can bring these people through thyroid surgery many of them will live, no matter how grave the prognosis preoperatively. So our problem resolves itself rather simply into one of logistics; that is, bringing up our weapons for the assault on this enemy of the human body.

It might be well to review briefly the advances in treatment of thyroid disease.

Our first great stride in reducing the mortality rate and increasing the operability of

toxic thyroid came about when iodine began its dramatic role in preparing the thyroid patient by producing an involution of the gland with its detoxification. This brilliant work, as you know, was pioneered by Plummer in 1923. The monumental role of iodine has been somewhat replaced by later drugs, but it seems the trend is already back toward the use of iodine along with the later drugs.¹

The next great advance in preparation of the toxic thyroid was the application of modern principles of surgery and medicine to the problem of the thyroid patient. We mean proper sedation with alleviation of the

1. Lahey, F. H.; Bartels, E. C.; Warren, S., and Meissner, W. A.: Thiouracil—Its Use in Pre-operative Treatment of Severe Hyperthyroidism, Surg. Gynec., and Obst., October 1945.

nervous complaints, proper attention to nutrition, especially the nitrogen and electrolyte balance, the use of digitalis and oxygen in the thyrocardiac, and the restoration of cardiac reserve, which, as the anesthetist so well knows, is the all important thing in surgery.

While these experiences were piling up, to light the way, the technical aspects of thyroid surgery were keeping pace. The brilliant standardization of thyroid surgery with anatomical dissection, pioneered by Doctor Frank Lahey, has been a great step forward as it puts the thyroid in the hands of the surgeon, instead of in the laps of the gods. The taking down of the ribbon muscles bilaterally, with the consequent adequate exposure of the gland in all its relations to the surrounding areas, is the greatest boon to the average surgeon that can be imagined, and it does not hurt the patient.²

Another step forward has been the newer concept of anesthesia, which gives the surgeon a patient properly anesthetized and in a state of physiological and chemical balance. It can not be too strongly praised for its role in increasing operability, and in decreasing morbidity and mortality. The ideal anesthetic is an endotracheal gas-ether combination, which takes away the risk of tracheal obstruction. The Carraways have pioneered the use of pentothal and in their hands has given excellent results.^{3, 4, 5} Local anesthesia certainly has its good points in the really severe toxic thyroid, and in the hands of some men serves wonderfully well. In our experience the wider dissection as advocated by Doctor Lahey in not so successful with local anesthesia.

Stage Operations: With the use of thiouracil few stage operations are needed but occasionally they will be necessary; and a good point, when in doubt, is to do a bipolar

ligation or a hemithyroidectomy.⁶ Economically it is harder on the patient, but a funeral on the thyroid patient who failed to react from subtotal thyroidectomy, who should have had a staged procedure, is also expensive and very disconcerting.

When the operability of toxic thyroid had reached a plateau in the better clinics, a dramatic impetus was added with the introduction of thiouracil and its related compounds into the field of medicine.

It was at first hailed as the cure of toxic thyroid as it did produce some involution of the gland, with amelioration of symptoms by decreasing synthesis of the thyroid hormone,¹ but in a few months it was established that it did not replace the surgical treatment of the disease. In the past two years it has come to be one of the greatest factors of all in boosting the plateau of operability of toxic thyroid to an unparalleled peak.

It is beautifully proven that if it is given in doses of 0.6 gm. daily for a sufficient period of time that severely toxic patients will go through surgery of the thyroid as nicely as with a simple non-toxic adenoma, with pulse without variation.¹ It is true it has its drawbacks since 20% of those receiving it for any length of time will have some toxic reaction; and some will die with agranulocytosis no matter how closely they are watched.^{7, 8} On the other hand, many people will lose their lives if it is not used. Related compounds are being tried clinically which, in the near future, will likely reduce the hazards of administration.

Thiobarbital (5,5 diethyl-2-thiobarbituric acid) finds its greatest usefulness in those patients unable to tolerate thiouracil, especially because of a drug fever.⁹ It is given in doses of 0.1 gm. daily, some men giving .05 gm. daily with equally good results.

6. Marshal, Samuel F.: Hemithyroidectomy in Stages in the Treatment of Hyperthyroidism, Surgical Practice of Lahey Clinic.

7. Gabrilove, J. L.; Kert, M. J., and Soffer, L. J.: Use of Thiouracil in Treatment of Patients with Hyperthyroidism, Ann. Int. Med. 23: 537, October 1945.

8. Moore, Frances D.: Toxic Manifestations of Thiouracil Therapy, J. A. M. A. 130: 313-319, February 9, 1946.

9. Astwood, E. B.: Observations on Use of Thiobarbital as Antithyroid Agent in Treatment of Graves' Disease, J. Clin. Endocrinology 5: 345, October 1945.

2. Lahey, Frank H.: Technique of Thyroidectomy Surgery, Surgery, 16: 705-724, November 1944.

3. Carraway, B. M.: Personal communication.

4. Deutch, Enoch V., and Herzlich, Jacob: Intravenous Sodium Pentothal as a Basal Anesthetic, Am. J. Surg. 72: 32, 1946.

5. Tuohy, Edward B.: Clinical Use of Intravenous Anesthesia Alone and in Combination with Other Drugs, South M. J. 34-42, 1942.

It is very potent but toxic reactions of severe type are more prevalent so we feel that its use had best be reserved for the larger clinics where the mortality rate can be a little better absorbed.

Iodine, given the last few weeks preoperatively to a patient taking thiouracil, and the withdrawal of thiouracil the last ten days preceding surgery will allow a much drier field at operation, with a lessened period of anesthesia and a lower morbidity and mortality.¹

If a patient cannot be controlled with iodine or thiouracil (and toxicity is high enough with this drug), we feel it is far safer to resort to therapeutic x-ray for preparation.

In this, the x-ray treatment of hyperthyroidism, there is considerable difference of opinion. It is not our purpose to argue its merits as opposed to surgical extirpation of the pathological gland in curing the disease but to complete the story of *increasing operability* of the severely or even critically ill patient suffering from toxic thyroid. It is on this level that there should be a better liaison between the surgeon and the roentgenologist, for we feel that there is no longer any doubt that properly administered x-ray to the thyroid will reduce the toxicity of the gland and enable one to treat more patients surgically.^{10, 11, 12}

Every one sees cases of toxic thyroid, especially the thyrocardiacs, who cannot, by ordinary methods, be gotten into condition for operation, either polar ligation or other stage operations, and whom you impotently watch die. It is true that thiouracil given to these people earlier would have been the answer, but you do not see them in time. We see the medically treated thyroid patient who has had iodine over a long period and the wonderfully detoxifying action of the drug burned out so that this critically ill patient has lost the power to come back.¹³ Roentgenologists, internists

and general practitioners need to effect better liaison with the surgeons in order to cut down the appalling loss of life due to simple neglect. Further, the public needs education about the diseases of the gland, but we can hardly educate the people until we come to a better understanding about the problems of the thyroid as we face them in our profession.¹⁴

Many of the larger thyroid clinics of the country are using x-ray in preparing their severe thyroids for surgery. The procedure is fairly well standardized. Barrow of Shreveport, Louisiana, uses slightly larger doses of x-ray than are commonly administered; that is, 750 r divided over three areas, right and left anterior, lateral and posterior, using 130 Kv and 3mm. Al. filtration; this dose given weekly for 6 to 8 weeks. Iodine is not usually allowed with x-ray therapy, though some roentgenologists do administer it.¹⁵ When the basal metabolism reaches 0, the x-ray treatment is discontinued. Ira L. Kaplan of Bellevue is also using these larger doses and finds them more satisfactory than the smaller ones.¹² W. O. Thompson and associates of Chicago use 300 r (50 r per minute) generated 200 Kv (constant potential), 10 ma., with 0.5 mm. Cu. and 1 mm. Al., a distance of 50 cm. and cone of 7.5 cm. The danger of damage to the skin with proper precaution is very slight.¹¹

The question of operative difficulty following irradiation of the thyroid still presents and the argument remains to be settled. In our experience the operation is prolonged somewhat because of dense attachments of the gland, and possibly the bleeding is greater, even though the superior and inferior thyroid arteries are ligated outside the gland, but being able to resect the gland at all without loss of life more than compensates for the increased operative difficulty.

We have administered thiouracil immediately following x-ray of the gland but not during the actual course of treatment (six weeks period), and have seen no reports of its concurrent use.

10. Barrows, S. C.: Reducing the Toxic Period in Hyperthyroidism, *Radiology* 33: 189-190, August 1939.

11. Thompson, W. O.; Taylor, S. G., III; McNealy, R. W., and Meyer, K. A.: Treatment of Severe Thyrotoxicosis, *West. J. Surg.* 47: 522-535, September 1939.

12. Kaplan, Ira L.: Discussion of X-Ray in Preparing Toxic Thyroid for Surgery, *Yearbook of Radiology* 1940, pp 369.

13. Schimmel, Irwin: Control of the Thyroid Storm, *Am. J. Surg.* 70: 312, December 1945.

14. Hinton, William J., and Lord, Jere W.: Is Surgery Indicated in All Cases of Nodular Goiter, Toxic and Non-Toxic? *J. A. M. A.* 129: 9, 605.

15. Soley, Mayo H., and Stone, Robert S.: Roentgen Treatment of Hyperthyroidism, *Arch. Int. Med.* 70: 1002-1016, December 1942.

Surgeons who have not seen the results of x-ray on the thyroid will be amazed at the improvement of the patient as manifested by lessened nervousness, better cardiac status, nice weight gain and lowered basal metabolism. Loss of life from irradiation is nil, so we feel the surgeon has everything to gain and nothing to lose in making greater use of this potent aid offered by the qualified roentgenologist, who is only too willing to cooperate in solving a very trying problem.

PRESENTATION OF CASE

This 27-year-old colored female was admitted to Opelika Hospital with complaints of severe pain in the right upper quadrant and shortness of breath. We had seen her a week previously at the office and had made a diagnosis of hyperthyroidism with cardiac decompensation and advised hospitalization which was refused.

On admission she was found to be critically ill. The right upper quadrant pain was very severe, and in the presence of a temperature of 102° it was difficult to rule out hydrops of the gallbladder. There was a huge mass extending to the pelvis on the right side, and the question to be settled was whether this was hepatic congestion secondary to the heart condition, or a hugely distended gallbladder. Scout films were interpreted as follows: The liver shadow was well below the anterior superior spine on the right. She had all the signs of cardiac failure and all the signs of primary hyperthyroidism, with a BMR of plus 60.

The laboratory findings showed 2 plus albumen, an occasional granular cast, a few white blood cells and an occasional red blood cell in the catheterized specimen. The Wassermann was negative. Blood chemistry was not studied.

She had had moderate symptoms of hyperthyroidism fourteen months before she was admitted and refused thyroid surgery because she was pregnant, and was afraid she would abort. She became very seriously ill immediately postpartum but neglected to secure treatment until one week before admission.

We were faced with a critically ill patient with severe hyperthyroidism, complicated by a pronounced cardiac decompensation. In fact, the patient had almost no cardiac re-

serve and was unable to retain anything by mouth.

She was started on sedation, digitalis and sodium iodide, intravenously, hypertonic glucose, and oxygen, with cessation of right upper quadrant pain in six days.

X-ray to the thyroid gland was started on the fourth day. The dose was 200 r each visit. Factors, 200 Kv., filtered with 0.5 mm. Cu. and 1.0 mm. Al. given at 50 cm. distance and 10 cm. cone used, only given to one side each time but on alternate sides twice a week for ten doses. Lugol's solution was given orally after the sixth day.

Admitted March 14th, she was discharged March 26th, and took x-ray treatment until May 15th when the BMR was plus 25. She was still in a very precarious cardiac balance, and it was believed that she could not tolerate even polar ligation.

Lugol's solution and digitalis were continued until June 1st, when thiouracil, 0.2 gm. three times a day, was begun. Fortunately she had no toxic reactions. Lugol's was added June 28th and the thiouracil discontinued July 5th. Her basal metabolism rate was plus 4, and her pulse regular but still rapid. She had gained 14 pounds since her admission. She was admitted again on July 11th and the next day a subtotal thyroidectomy under gas-O₂-ether was attempted. We had gotten through the platysma and had started to elevate the flap when the pulse became imperceptible and blood pressure unobtainable. The anesthetic was discontinued and oxygen administered, also plasma and later glucose. The anesthetist felt a little better and a bipolar ligation was done with a great deal of trepidation, but she survived and was discharged four days later, on Lugol's solution. One week later thiouracil was begun again. Her general improvement was remarkable, the cardiac status improved week by week, and she suffered no ill effects from the thiouracil.

She was readmitted on September 19th, 1946. The next morning a subtotal thyroid was done, using Lahey's technique. Due to her previous poor reaction to anesthesia it was decided to go as far as possible under local. We were able to get the right lobe elevated when she became restless. We started her on pentothal and the subtotal proceeded without mishap. Her condition

was excellent and at the end of the operation her pulse was 90 per minute. She ran a very smooth postoperative course; half the clips were removed on the second day and the remainder on the third day; and she walked out of the hospital on the fourth day.

Her recovery was uneventful, and she has no cardiac disturbance and her nervousness has largely disappeared, though her exophthalmos is still present. She is now doing her house work without symptoms.

The report of the pathologist follows:

Gross: The specimen is thyroid tissue weighing 35 grams. The larger lobe is 6.2 by 3.8 cm., and the other one about two-thirds this size. In both cases the tissue is unusually firm, has a dark brown color, is solid, with little differentiation. There are no definite nodules in this tissue.

Microscopic: Sections show benign thyroid. In many places there are signs of hyperplasia. The acini consist of tall, crowded columnar cells that are folded inward often. These cells are large and stain deeply. There is slight vacuolization of the colloid around them. The colloid has a pink-staining quality. There is no essential increase in fibrous tissue. This is a hyperplastic gland with some degree of involution.

Diagnosis: Thyroid hyperplasia with moderate involution.

We realize x-ray was supposedly contraindicated here but due to the hopelessness of her case we decided to use it and were rewarded.

SUMMARY

We have attempted to review the accepted treatment of toxic thyroid from a practical viewpoint. We have offered the following methods for increasing the operability of the thyroid:

1. Use of combined iodine and thiouracil (or related compounds).
2. Use of modern principles of medicine and surgery, with practical application to the field of the thyroid and the body as a whole.
3. Better understanding of physiological processes during anesthesia.
4. Standardization of surgery of the thyroid, and the taking down of the ribbon muscles for superior exposure.
5. The application of controlled x-ray in adequate doses to the thyroid to help prepare the patient.
6. Better liaison between the general practitioner, internist, roentgenologist and surgeon.
7. Lay education about the dangers of untreated thyroid disease.

A particularly trying case of thyrotoxicosis, with cardiac decompensation, that was made well by the application of the principles so outlined is presented.

CONCLUSION

We lay no claim to a large series of cases, and offer this discussion with the hope that more people with toxic thyroid may be made well by our efforts.

PRESENT DAY TRENDS IN ANESTHESIOLOGY

E. B. ROBINSON, JR., M. D.

Birmingham, Alabama

It gives me a great deal of personal and professional pleasure to have the privilege of discussing this subject. It is our earnest hope and desire that the discussion will further stimulate the thoughts and actions of the medical profession in this State so that there can be a more universal availability and use of modern anesthesiology as it exists for the benefit of patients and surgeons in other states and regions of our country, rather than the quite limited use we have in

Alabama today. Do the members of the medical profession of this State want the benefits of modern anesthesiology for their patients or are they just satisfied with letting well enough alone?

I am sure the answer is for the former. In any event it offers a challenge to all of us to go forward with all the advances of modern medicine and not just a part of them. Those of us in the field of anesthesiology have accepted the challenge here, and later on in this paper our efforts along this line will be discussed. It is not amiss to state

that one of the main obstacles to be overcome is that there are so few anesthesiologists in Alabama. To my knowledge there are only four anesthesiologists, physician anesthesiologists, if you prefer, in our State. There may be others but certainly the total number cannot be over six or seven. From this it is obvious that our field of daily usefulness is very limited, but it certainly does not preclude the future expansion to more localities. Again I would like to say that I consider it a privilege to have the opportunity to discuss the subject from this viewpoint, especially since I believe this is the first time it has been presented before the State Association, rather than just a discussion of some particular agent or method as was so excellently presented yesterday afternoon by Dr. John K. Taggart, Jr. on Saddle Block in Obstetrics.

Since some of us are attempting to do what might be termed pioneer work in Alabama in modern anesthesiology in all of its applications, it is probably wise at this time to start at the beginning of the story and define the term anesthesiology.

By anesthesiology is meant not only the science of the administration of drugs for the comfort of patients during operation but also the management of patients in depression from other causes—pneumotherapy, intravenous therapy, therapeutic and diagnostic procedures involving the use of anesthetic drugs, and other efforts based on similar scientific knowledge logically falling within the scope of anesthesiology. So it is readily seen that anesthesiology encompasses considerably more than just rendering a patient unconscious for surgery. Unfortunately this latter concept has been the vogue for too long. In order for the definition of anesthesiology to be carried out to the greatest extent it would involve the practice of medicine and therefore would require a physician.

Too long this important phase of medicine has been neglected and relegated to that part of the surgical management as being matter of fact and relatively unimportant. I would ask you to consider this one point: There are few things that a surgeon can do during an operation that will cause the sudden and tragic death of a patient but there are many things that can happen due to in-

adequate knowledge or faulty judgment in matters pharmacologic as well as physiologic during the conduct of anesthesia that can bring this about. Actually an anesthesia can be described as conducting a patient "through the valley of the shadow of death."

The peritoneal cavity, as we all know, will stand many insults but this cannot be said of the vital centers through which anesthetic drugs produce their actions and results. It is true that the outcome of poorly given anesthesia is not always death, but what of the permanent disability to the brain? Will that patient's mind ever be as keen as it was before anesthesia?

As for the liver, anesthetic drugs may cause pronounced changes in its function even when given properly. Due to its multiplicity of functions, such as with nutrition, its ability to excrete and secrete various substances, to store essential substances, and its function of detoxifying or destroying substances foreign to the body, an improperly given anesthesia that might cause anoxemia or too large a dose of a certain anesthetic might initiate marked depression of these functions to such an extent that the successful outcome of the surgery would be unnecessarily jeopardized.

Likewise, anoxia modifies renal epithelium and capillary endothelium causing an increased permeability. Histological changes in the kidney due to the anesthetic drug are not common but the effects of the drug, such as the inhibition of urine formation by ether, should receive serious consideration in the anesthetic management of a patient with kidney disease. Certain anesthetic drugs and undue changes in physiology as a result of lowered circulation or oxygen content of the blood can cause permanent damage to the heart. During surgery the vital functions are subjected to a heavier load than normal so it behooves us to be sure that the anesthesia or conduct of anesthesia adds as little to this as possible. In some instances, with proper attention to details, this load can be lessened.

Surgeons have depended and still depend on nurse technicians for the administration of anesthetics. The present need for the existence of this situation in many localities is admitted. On the credit side it can be said that the aid of the nursing profession has been priceless; but, on the debit side,

the neglect by the medical profession of so important a function has thus been compensated to some extent. This does not need to continue as such. Efforts should be made to have a full-time physician anesthesiologist in all communities of this State which are large enough to justify the full-time practice of the specialty, and it is not felt that the community would have to be too metropolitan in size.

In such communities, until there are an adequate number, nurse technicians will still be needed and they can better be utilized by working under the supervision of one well versed in anesthesiology. Since it is not possible to have full-time anesthesiologists in all communities ways should be found to interest and train doctors of medicine who will practice the specialty on a part-time basis. Last year there were no hospitals in the State that were approved for residency training in anesthesiology but now there are two. This can only provide a start but with this nucleus it is hoped that in the not too distant future there will be others.

Thirty or forty years ago this country woke up to the fact that the average doctor was a no better obstetrician than the average midwife. What was the result? In larger towns men began to take up obstetrics as a specialty, and schools laid emphasis on obstetrical teaching for all physicians, and a large part of the problem was solved through the use of part-time obstetricians, and as a result very competent obstetrics is today practiced throughout the United States, regardless of whether the practitioner is a full-time specialist, or a physician who engages in other types of practice. Young men coming out of medical schools now should be encouraged to take up anesthesiology as a full-time or part-time specialty and this to a large extent can be brought about by the influence of other practitioners, especially surgeons. One surgeon in this State only a few years back decided he wanted a full-time anesthesiologist well versed in the specialty, so he stimulated interest in the field, promoted the period of training and, as a result, now has what he wanted.

This now brings us to a discussion of what is an anesthesiologist. He or she should be a graduate of a recognized medical school,

serve an approved internship and undergo training in anesthesiology as do practitioners of other branches of medicine. The anesthesiologist takes the legal responsibility from the shoulders of the surgeon and even if he does not take the legal responsibility from the man's shoulders he certainly takes the moral responsibility by being there to watch the patient's condition and leaves the surgeon free to take care of his problems. No one can simultaneously do two jobs well. We seriously believe he can lighten the burden of the surgeon in the surgical management of his patients.

The first and foremost duty of the anesthesiologist is to give the patient good service and this is not confined solely to the period of the actual surgery. He visits the patient preoperatively and reassures the patient and in general makes the patient much more susceptible to good surgical care than in the case of one who is not acquainted with the medical problems behind the particular condition for which the patient is receiving medical attention. He attends to the important detail of preoperative medication. He can also be of service to the surgeon in the interpretation of the risk, by advising which type of anesthesia will be most advantageous for a given operative procedure. During the operation he can relieve the surgeon almost completely of the problem of the patient's condition. He can assume full responsibility for treatment of serious derangements of circulation and respiration. Further than this he is much more apt to detect the approach of such events more readily than one lacking a medical background.

Preventive measures instituted early are certainly easier on the patient and also will save the surgeon some trying moments. For example, a fall in blood pressure is much easier to control and overcome at its onset than when it has reached very severe limits and is well established.

Since the methods of anesthesia today have become so complicated and are so capable of producing conditions that can bring about fatalities and other complications they must be in the hands of people who are able to accept the serious responsibilities which go with them.

The physician anesthesiologist can produce favorable conditions with endotracheal

anesthesia for lung surgery and high sympathectomies which are done for hypertension. Actually these two fields of surgery did not reach their present attainments until anesthesia progressed to provide satisfactory working conditions. Good anesthesia in lung surgery is absolutely essential and by this is meant not only the ability to produce an unconscious patient by an anesthetic agent but also a thorough understanding of respiration and circulation along with manifestations of their alterations with the "know how" of keeping this as near to normal physiology as possible. Until the advent of modern professional anesthesia no serious attempt at lung surgery was done in Alabama. Patients with diseases of the lungs which were amenable to surgery had to seek treatment in other states. Now a fair amount of lung surgery is being done right here at home, with as good results as reported from other places.

The anesthesiologist also follows the patient in the postoperative period and can be of considerable aid in the management of complications such as atelectasis and thrombophlebitis. He is able to reduce pain by blocks and intravenous procaine. In the postoperative period most anyone can aspirate mucus from the pharynx that is causing partial obstruction and thereby interfering with proper oxygenation. The removal of this mucus is most important, but also important is why it is there and what is causing it to be there. The anesthesiologist is in a position to be of help to the surgeon in answering this and relieving the cause of such a condition.

The physician anesthesiologist is also one who is competent to carry out diagnostic and therapeutic blocks for such conditions as thrombophlebitis, postoperative pain, or to determine if a hypertrophied scalenus muscle is causing the pain in an arm. Time does not permit of further elaboration. Blood transfusions and parenteral therapy fall very well under his direction and management. Likewise does oxygen and helium therapy. Not to be overlooked is the employment of the anesthesiologist for resuscitation.

The acid test of anesthesiology is the postoperative condition of the patient. It can be argued that the mortality and morbidity under some of the older forms of anesthesia,

such as deep ether anesthesia, are just as low as that of the anesthesia of the anesthesiologist. It can be readily seen that this argument has no basis when the operative procedures are considered in terms of the magnitude and seriousness of the operation. Actually it is impossible today to accomplish some of the operations of great magnitude which require special forms of anesthesia without the services of the anesthesiologist.

Finally, what can be done to bring about a greater development of the field of anesthesiology in Alabama? We would like to enlist your aid, support and encouragement in the accomplishment of this. As mentioned before we plan to encourage young doctors to take up this specialty and to that end facilities for training them are already available at the Medical College of Alabama and the Employees' Hospital.

A full-time residency is available for those taking up anesthesia on a full-time basis and shorter courses of instruction and training for those who will practice the specialty on a part-time basis. In order for this program to succeed, first of all, for such people receiving this training there must be the opportunity and facilities for them to put this training into practice and in so doing earn a livelihood. That has been one drawback in attracting physicians to anesthesiology because other fields of medicine appeared more remunerative. This is in some measure due to the fact that the physician anesthesiologist's selection, or usually non-selection, and reimbursement have been in the hands of hospital management and hospital trustees. By the same token, hospitals have not been acutely aware of the advantages and necessity for a change in their policy of administering modern anesthesia. Hospitals have not had an easy time with rising costs and they have had to make every effort to keep hospital costs within reasonable limits. Because it has seemed that less expensive nurse technicians met this requirement it is but natural that they have been doing the vast majority of anesthesia in this and other states.

An anesthesiologist can offer a far wider service to the patient for the same money he is now paying and in the over-all consideration of what the patient receives for his money it will actually be more economical. No matter who gives the anesthesia the

patient should not be exploited and funds derived from anesthesia should not be used to help defray general operating expenses of the hospital. In order for the public as a whole to receive the best possible service that anesthesiology is capable of supplying, both by utilizing the anesthesiologists already available and of training others, there must be both an economic and professional recognition of anesthesiologists, as well as the opportunity.

Ophthalmic Migraine—The main characteristic of ophthalmic migraine is periodic or paroxysmal headaches preceded by visual disturbances. The patient first feels depressed, then, some minutes later, some of the visual symptoms such as blurring of vision, fleeting scotomas, hemianopsia, star-like phenomena, pin wheels, barber poles, black spots, crude flashes of light and color appear. This goes on for about one-half an hour and is then followed by a nauseating headache. The intensity of this headache cannot be described. It will go on for hours and usually will be relieved only by a night's sleep. This headache is exaggerated by exercise, movement, noises and light. Once developed, it is difficult to control and can be alleviated only by medication given when the visual symptoms appear. The patient may become moody and seek solitude in a dark room. The attack repeats itself periodically every week or month. Being at one time afflicted with migraine, I have had two attacks in one day. There may be disturbances of sensation, motility and speech. One may occasionally observe pallor or redness of the face, dilatation of the pupils and salivation. There have been cases reported where one or more ocular muscles have been paralyzed, mainly those supplied by the oculomotor nerve, also ptosis, strabismus and diplopia. Dynes reports several cases of permanent scotoma which have persisted for some years.

Between attacks the patient is usually free from headache. The attacks usually start at puberty or several years later and cease around the menopause. If treatment is started, the frequency of attacks grows less; also the attacks get farther apart as one gets older. The ophthalmic type is more serious as it can cause permanent eye defects, particularly scotoma.

Ophthalmic migraine is not difficult to diagnose. The diagnosis is made mainly by the visual symptoms followed by the headache which is very characteristic of the disease. One has to think of tumors, aneurysm of the cerebral vessels which may have paroxysmal headaches, also of a so-called histamine headache, which has a few eye symptoms.

Migraine is a stubborn disease which does not yield easily to treatment. The number of drugs used is in direct proportion to the number of causes. All infections should be removed. All of my cases showed intoxication from the gastrointestinal tract and were constipated. It is neces-

We hope that the State Medical Association will see fit to appoint a standing committee on anesthesiology whose function it will be to stimulate and promote a wider application of modern anesthesiology in Alabama. We ask for no favors, only the chance to prove the usefulness of our services. Let the results obtained by the anesthesiologist be the proof. Anesthesiology is the practice of medicine and therefore belongs to the physicians.

sary that this be corrected. All foods that have a tendency to bring on the attacks should be excluded. It may be necessary to test the patient by excluding foods to see the result on the frequency of attacks. Protein sensitization tests should be made to find out the objectionable foods. As to drugs many suggestions are made. In the ophthalmic type, therapy should be started when the visual symptoms appear. At this time at least three aspirin tablets are given with a glass of water. The headache will either not appear or will be dulled and then disappear in a short time. If one waits until the headache has appeared it is very difficult to stop.—Holden, *South. M. J.*, Sept., '47.

Ovarian Hemorrhage—To make the diagnosis of ovarian hemorrhage the following points should be kept in mind:

1. Ovarian hemorrhage should be remembered in any acute abdominal condition in a woman between the menarche and the menopause, especially from 16 to 30 years of age.

2. Signs and symptoms in time relation to their occurrence in the menstrual cycle should be evaluated and especially noted if they occur within two weeks of the next due period.

3. A history should be sought of sudden onset of pain in the lower abdomen, intermittent or constant, tending to remain localized or to radiate across or up, and perhaps later relocating, followed by nausea and occasionally vomiting.

4. Tenderness below McBurney's point, with slight rebound tenderness and rigidity, slight fever, and leukocytosis should be looked for.

5. Pain on motion of the cervix by rectal or vaginal examination should be carefully sought.

6. The condition should be considered in every woman patient in her productive years who is suspected of having acute appendicitis or ruptured ectopic pregnancy, it should be remembered where there are signs and symptoms of ectopic pregnancy in a virgin or in a married woman who denies fertile exposure.

Sometimes the preoperative diagnosis of an acutely painful abdomen may be extremely difficult, often impossible. Exploratory operation is not to be desired either by the physician or the patient. Yet when he is faced with a difficult problem and has held consultation, the physician is not infrequently justified in operating in an effort to rule out some more dangerous condition.—Jones, *Texas State J. Med.*, Aug. '47.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham
C. E. ABBOTT Tuscaloosa
JOHN L. BRANCH Montgomery
D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

September 1947

ANTICOAGULANTS

"If blood did not possess the quality of coagulation, injuries would allow it to leak from the body as freely as water leaks through a sieve. This knowledge, which is possessed by every physician, has dominated medical thinking about coagulation of the blood. A vast proportion of the efforts of physicians interested in coagulation has been devoted to making blood clot better, because of observation of the consequences of blood which clots poorly. There are few physicians who have not wished for an efficient method by which they might stop bleeding. It is quite clear now that thoughts of the medical profession must be directed in the reverse direction as well; in some circumstances there are great benefits if the property of coagulation of blood is impaired. When the vascular system of the blood is intact, coagulability of the blood may be reduced substantially without harm, and indeed with great benefit. It is doubtless true that hemorrhage causes far fewer deaths than intravascular thrombosis. The problem of intravascular thrombosis is, therefore, more important than the problem of hemorrhage . . .

"The importance of diseases of blood vessels would be greatly lessened if vascular

disease did not provoke thrombosis and if blood would not clot inside living blood vessels. Phlebitis would be a benign disease if it did not cause venous thrombosis. Arteriosclerosis would have lesser importance if it did not cause coronary and cerebral thrombosis. The two chronic occlusive arterial diseases of the extremities, arteriosclerosis obliterans and thrombo-angiitis obliterans, would not cause any great impairment of the arterial circulation to the extremities if thrombosis were not a part of them. The curse of cardiac irregularities, coronary thrombosis and congestive heart failure would be substantially smaller if mural thrombosis and embolism were not associated with them. There would be no pulmonary embolism or phlebothrombosis if blood would not clot inside blood vessels; the gangrene of trench foot and immersion foot would be avoided in many instances. These observations emphasize that the health of man would be greatly improved if intravascular thrombosis did not occur. That which is desired is a method of impairing coagulation so that intravascular coagulation will not occur while the protective mechanism of coagulation, which prevents bleeding, remains. The use of anticoagulants is a step in the direction of achieving the prevention of intravascular thrombosis."

Thus does Allen¹ begin his discussion of this relatively new and ever-widening subject. He further tells us that, "Currently, there are two preparations clinical use of which impairs the coagulation of the blood: heparin and Dicumarol." The Rochester observer then discusses the advantages and disadvantages of each and his conclusions, in part, are as follows:

"Students of coagulation of the blood must give more attention to the desirability of impairing the ability of the blood to clot within blood vessels. This statement is emphasized by the observation that hemorrhage causes many fewer deaths than intravascular coagulation of the blood.

"Experimental and clinical studies indicate that coagulation of blood may be impaired by anticoagulants with the result that intravascular thrombosis usually can be prevented; hemorrhage occurs infrequently when anticoagulants are used expertly.

1. Allen, Edgar V.: The Clinical Use of Anticoagulants, J. A. M. A. 134: 323 (May 24) 1947.

"Heparin and Dicumarol are fairly satisfactory anticoagulants, but they have deficiencies which make desirable a continued search for an ideal anticoagulant for clinical use.

"Hemorrhage is the sole danger from the expert administration of these drugs. Minor hemorrhage occurred in 3.1 per cent and major hemorrhage in 1.9 per cent of 1,686 postoperative cases.

"The overall experience in this group of 1,686 cases indicates that approximately 73 lives were saved by the use of Dicumarol and that 211 patients were spared the experience of venous thrombosis and pulmonary embolism.

"The respective virtues of venous ligation and anticoagulant therapy have not been determined in a manner which is wholly satisfactory. With one minor exception it appears that the expert use of anticoagulants produces results which exceed those which follow ligation of veins."

Allen has made a brief but splendid review of the situation as it now exists in a new, expanding and far-from-settled mode of therapy. And his report, based on 1,686 postoperative cases at Rochester that were treated with Dicumarol, indicates a great decrease in both mortality and morbidity when compared with results obtained when no anticoagulants had been used. Much work, both clinical and experimental, remains to be done before anticoagulants will become so safe and standardized that their use will become really widespread. But it is apparent that we are moving in that direction; which fact gives yet more evidence of the eternally progressive spirit of modern medicine. And we happily agree with Allen when, in his last paragraph, he tells us that, "Medicine is on the threshold of new and satisfying experiences with methods for the prevention and treatment of intravascular thrombosis."

THE NATIONAL BLOOD PROGRAM OF THE AMERICAN NATIONAL RED CROSS

The great values of blood transfusions in the saving of lives have long been known. Transfusions were given to a limited extent in World War I for combatting hemorrhage and shock in the American Expeditionary Forces. The knowledge of the uses of blood

then available was by no means comparable to that which exists today about the miracle of blood.

Between the World Wars a number of notable contributions were made by medical research. Methods of collection, preservation and administration were improved. New properties of blood were discovered. Their usefulness in a wide variety of diseases became revealed. Discovery that plasma could be dried to a powder and dissolved in water when needed was in itself a great advance because of the ease with which it could be stored, transported and used in emergencies wherever they might occur.

In World War II our Government called upon the American Red Cross as the logical agency to procure the blood that proved to be one of the foremost life savers of the war. No greater opportunity was ever afforded than that of supplying the needed, badly needed, blood. This wartime program was a spectacular success. A great factor in its success was the spirit engendered by the Red Cross in the hearts and minds of the people of this country; a spirit that moved them to give freely of themselves so that the sick and wounded of their Armed Forces might survive. Thousands live today because of the people everywhere who responded to the Red Cross appeal for blood.

Any beneficial knowledge that can be gained from war should be turned to the aid of a war surfeited people in time of peace. Based on the experience of World War II the use of blood in the treatment of sick and wounded people has become standard procedure throughout the world. Nor is the current knowledge of blood by any means complete. Some of the greatest physicians and scientists of our time are devoting themselves to the study of blood and its uses. There is promise that further revolutionary discoveries will be made if sufficient amounts of blood can be provided for continued widespread use and observation combined with intensive research.

In 1946 more than 2,000,000 pints of plasma were declared surplus to the needs of the military. They were returned to the Red Cross for free distribution through state health departments for civilian use. It is estimated that this surplus plasma will supply such needs for perhaps another year.

Replenishment must be provided—and very soon—lest many of our people die from lack of plasma.

The need for whole blood is also acute. It will become increasingly so as more physicians become skilled in recognizing the indications for its use and more facilities for its administration become available. Likewise more derivatives of blood are being developed and used as life saving aids to increasing numbers of people for injuries, surgical operations and the treatment and prevention of disease.

It is of vital importance that action be taken at once to make further study of blood possible and to supply the constantly increasing needs for it and its products. If such action is to be effected, one person in every thirty-five will have to give blood at least once each year to supply the needs of our country—or 3,700,000 contributors annually. Any healthy person in the United States may be a giver. Anyone in need of it may be a receiver of the miraculous powers of blood. Many will be both.

The source of blood is confined to the veins of the people. It cannot be compounded nor manufactured as are biologic products, medical supplies and drugs. Blood cannot be purchased commercially and supplied in the various forms to meet the needs without costs that are beyond the resources of the vast majority of our people. Governments have not been able to compel the contribution of blood from their citizens. Even the totalitarian nations were dependent upon voluntary contributions to meet their needs during the war. The operation of blood banks by private and community hospitals is limited in application and cannot be expected to meet the national needs. It is only by the procurement and distribution of blood on a large scale that costs can be lowered and the quantities necessary be provided.

How could sufficient blood be obtained to meet the needs of the American people for whole blood and blood derivatives? Could the Red Cross with its wealth of experience in reaching millions of people and with its specific experience in blood donor work undertake this program as a peacetime service? Was it a Red Cross job? Could Red Cross chapters collect enough funds to carry out a program of such magnitude?

The Central Committee, though receptive to the suggestion that the Red Cross undertake this responsibility, wanted these questions taken to the Red Cross chapters for consideration. The Central Committee felt that the opinion of the chapters was most important. After all their role would be a major one should such a program be undertaken. Accordingly, eighteen regional meetings were held. The discussions at them indicated that 97 percent of the representatives of the 714 chapters in attendance recognized the need for the American National Red Cross to undertake a National Blood Program.

Prior to further action, the proposed program was discussed with and approved in principle by such agencies as the American Medical Association, the Association of State and Territorial Health Officers, the American Public Health Association, the U. S. Public Health Service, the U. S. Veterans Administration, the Army, the Navy and the American Hospital Association.

On June 12, 1947, the new Board of Governors, American National Red Cross, meeting in Cleveland, Ohio, ratified and confirmed a previous action of the Central Committee approving and authorizing the National Blood Program as an activity of the American National Red Cross. By this decision they brought to a climax several years of intensive study and consideration of what the American National Red Cross might do to help supply blood needed to safeguard the health of all the people of the nation and to be the means of saving the lives of untold thousands.

This action insures to peacetime the gains to humanity of the record in life saving that had never been equaled before in times of war. It recognizes that the lessons learned since the dropping of the atomic bombs on Hiroshima and Nagasaki call for broad national planning to meet the future needs of national defense, both military and civilian.

There are five important operations in connection with a national blood program:

- (1) collecting the blood,
- (2) processing it for use as whole blood and blood derivatives, including packing and storage,
- (3) distributing the blood and blood products for the needs of the people,

(4) making blood available for continuous research and investigation to insure safety of the products and to determine the uses to which they may be put for the greatest benefits of mankind, and

(5) maintaining of high standards set by the leading authorities in this field.

A program of such magnitude must of necessity be one of gradual development. Time will be required to organize the work, to procure and train the personnel, and to obtain equipment which is in short supply. The first year of operation contemplates the establishment of 20 or 25 centers carefully selected with relation to the advantages they offer in the early stages. It is estimated that from three to five years will be required before the program is in full operation. In the meantime local programs will continue on their present basis, and new programs will be established as heretofore with the expectation of integration with the national program later on. In this way, full benefits from the fractionation phase of the program will be available to those communities where only whole blood and plasma are now being provided.

In addition to whole blood and plasma, the National Blood Program will provide other blood derivatives of proved value: serum albumin, used for shock and certain kidney diseases and other conditions; immune serum globulin, for modification or prevention of measles; antihemophilic globulin, effective in the treatment of hemophiliacs, or "bleeders," blood grouping serum, for determining blood types; fibrin films, used in brain and nerve surgery; red cell suspensions, for treating certain anemic conditions; and red cell paste and powder, to promote the healing of certain wounds. Any other products which continuing research may find useful in medicine and surgery will be provided.

Since people in rural districts require blood as well as those in cities the program must be sufficiently flexible to meet widely varying conditions and needs in large and small communities throughout the country. It is the ultimate goal to collect blood from volunteers from every community everywhere and to give every healthy person an opportunity to make a contribution at least once a year. For those people to whom a

blood donor center is not available it is planned to provide the services of a mobile unit.

Under certain conditions it may be expedient to type the donors in a community and have them available when whole blood is needed in an emergency situation. In other instances plasma or serum albumin and other stable derivatives will be made available and will tide cases over until whole blood can be transported from a central depot where all types are constantly on hand. In this way the program will be enabled to fulfill its purpose to furnish blood, blood plasma, and all of its derivatives to all the people of this country irrespective of race, creed, color or financial ability to pay. The only charge ever made to any patient will be a reasonable one by the physician or hospital for professional services in administering the material. The Red Cross will make no charge.

That part of the program which deals with collecting blood will operate substantially along the same lines as the wartime blood program, with established blood donor centers, and with mobile units to cover outlying communities. Red Cross chapters will assume the important responsibility of complete community organization to enroll blood donors and will arrange for the bleedings as needs require. In addition to the competent professional personnel for technical work, many volunteers will be necessary for nontechnical work in the centers.

That part of the program which deals with processing of the blood will involve highly skilled work. Some of the blood collected will be examined, typed, and distributed to local hospitals for use as whole blood; some of it will be shipped to commercial laboratories with which contracts will be made by national headquarters to fractionate blood into its derivatives. It is believed that approximately 60 percent of the blood collected will be used as whole blood.

That part of the program which deals with distribution involves making the best possible arrangements that will afford ready accessibility of the blood and blood products to all people and their physicians and hospitals, including veterans, military, and marine as well as civilian hospitals.

That part of the program which deals with continuous research and study as to the

effectiveness and new uses of the blood products will be carried on by research authorities with the guidance of the Blood and Blood Derivatives Committee of the American National Red Cross Advisory Board on Health Services.

Inasmuch as, on the basis of recorded scientific and medical opinion, there is no difference in the blood of humans based upon race or color, the plan does not require the segregation of blood; however, whenever necessary to insure the success of the plan, which is to make available blood and blood derivatives to all the people of the United States regardless of race or color, chapters will collect and hold blood in such a manner as to give the physician and the patient the right of selection at the time of administration.

Operating centers of the National Blood Program will be selected and established only after full consultation between the national organization and the chapters concerned. Such chapters will be furnished with complete and detailed information covering the method of organization of the chapter blood donor service, ground work for community support, public relations and promotion, the use of publicity, suggested publicity aids, the operation of the blood donor center, clinic instructions, and the relationships between chapters, area, and national headquarters.

The program will be financed through contributions made by the American people. Each year the Red Cross fund campaign will take into consideration the amount necessary to carry on this important new service.

The cost for the first year may be between three million and five million dollars. The costs of operation of the centers will be shared on an adequate basis between the national organization and the chapters.

The value received from the cost of the program cannot be estimated, for there is no way to determine the value of lives saved by having blood and blood products available when needed. One can rely, however, on the testimony of the medical profession as to what has already been accomplished and on the statement of the most eminent scientists in the blood field that we are on the brink of even greater discoveries in the uses of blood for the benefit of mankind.

MISSISSIPPI VALLEY MEDICAL SOCIETY

The 12th Annual Meeting, Mississippi Valley Medical Society, will be held in the beautiful Municipal Auditorium, Burlington, Iowa, Oct. 1-2-3. Over 25 clinical teachers from the leading medical schools will conduct this great postgraduate assembly whose entire program is planned to appeal to general practitioners. There will be over 30 technical and scientific exhibits, a noon-day round table luncheon, and a big banquet, preceded by a social hour. Dr. Edward L. Bortz, President of the American Medical Association, will be the principal banquet speaker, together with the Presidents of the Illinois, Iowa, and Missouri State Medical Societies. For the first time in the history of the organization No Registration Fee will be charged. All ethical physicians are cordially invited to attend. A detailed program may be obtained from the Secretary, Harold Swanberg, M. D., 209-224 W. C. U. Bldg., Quincy, Illinois.

THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians will conduct its 29th Annual Session at San Francisco, April 19-23, 1948. General headquarters will be at the Civic Auditorium. Dr. William J. Kerr and Dr. Ernest H. Falconer, both of San Francisco, are the co-chairmen for local arrangements and the program of clinics and panel discussions. The President of the College, Dr. Hugh J. Morgan, Professor of Medicine at Vanderbilt University School of Medicine, Nashville, Tennessee, is in charge of the program of morning lectures and afternoon general sessions.

SOUTHERN PSYCHIATRIC ASSOCIATION

The Officers and Fellows of the Southern Psychiatric Association announce that their annual meeting will be held in Birmingham, Alabama, on October 13th and 14th, 1947.

Chronic Heart Disease—Two major factors are responsible for the production of chronic heart disease, namely, heart strain may be extrinsic, as in hypertensive heart disease, intrinsic, as in chronic valvular disease, or the normal strain, with impaired nutrition, as in arteriosclerotic heart disease. Most commonly there is a combination of these in some form of strain with arteriosclerosis.—*Ferguson, J. Indiana M. A., Aug. '47.*

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

ALABAMA'S PUBLIC HEALTH PROGRAM

Despite the fact that the Alabama State Health Department has been in business for many years, and the further fact that local health departments have been set up in every one of the 67 counties of the State, and the further fact that we have not faltered in our purpose to fully acquaint all the people of Alabama with the work of the State and the local health services, there remains a great lack of understanding on the part of far too many people of the functions of the health services. It is to help in some measure to remedy this situation, that this paper is being written.

In keeping with the principles of good public health practice, the following are some of our activities for the prevention of disease, and the promotion of the best possible personal and public health:

1. *Communicable Diseases.* An important responsibility is the prevention or control of the spread of communicable diseases, such as diphtheria, smallpox, scarlet fever, typhoid fever, tuberculosis, and others.

The health officer may be called to assist physicians when the diagnosis of a communicable disease is in question, and in cases where an outbreak has occurred. The laboratories of the State Health Department give aid in confirming a diagnosis by examining specimens submitted for this purpose.

When certain communicable diseases are reported to the health officer, the public health nurse makes a home visit, or visits, to inform the head of the household in the important matter of preventing the disease from attacking other members of the family, and of the community.

The sanitary laws, rules, and regulations established by the legislature and the State Board of Health, provide uniform, statewide minimum measures designed to protect and maintain the health of the individual and the community. These regulations possess

the power of law, as provided in the statutes of Alabama.

To control syphilis and gonorrhea, provision is made for the examination, diagnosis, and treatment of infected persons and their contacts. With our modern and effective rapid treatments, and the active co-operation of every person in the State, we have gone far, and we should go further still, in the eradication of these diseases.

In order to control the spread of tuberculosis adequately, we have found it is essential that open or infectious cases of tuberculosis should be placed in sanatoria. An open case is one that discharges the tuberculosis germ by coughing, spitting, or even talking. During one's stay in a sanatorium, the patient is taught about the disease, and how to help himself, and also to protect members of his family and the community.

Diseases such as smallpox, diphtheria, whooping cough, scarlet fever, tetanus, typhoid fever, and others, can and are being prevented by well known protective measures. Experience has taught us that by the continuous prosecution of our program of immunization we can lessen the incidence of these diseases. Compare conditions as they are today with conditions of a few years ago. "Comparison proves."

2. *Sanitation.* Our sanitation program includes all activities that relate to the hygiene of environment. Little can be accomplished in public health work unless provision is made for the basic sanitary necessities.

Of primary importance is an adequate and safe water supply. Samples of water are sent periodically to the public health laboratory for analysis.

Sewage must be disposed of in a sanitary manner to prevent the spread of the diseases of the gastro-intestinal system. These things we do with effectiveness.

The preparation, handling, and storage of foods require constant supervision. All food and drink establishments are inspected regularly to see that provisions of the laws are adhered to.

State and local health authorities co-operate to the end that all milk and milk pro-

ducts reach the consumers in safe condition.

Investigation and abatement of public nuisances are part of the general sanitation program. It has been well and truthfully said that "a public health nuisance is anything that is dangerous to human life, and whatever renders soil, air, water or food, impure or unwholesome."

3. *Public Health Laboratory.* The services of the public health laboratory are necessary to assist physicians in the diagnosis of communicable diseases. We give this service freely to all physicians. Samples of food, water and sewage, are all examined as they are sent in, and, if they are suspected as media of diseases, they are promptly investigated by the health officer.

4. *Maternal, Infant and Child Hygiene.* Maternal hygiene services are given that unnecessary deaths and complications of pregnancy may be prevented. All expectant mothers are urged to place themselves in the hands of physicians early in pregnancy, for the attending physician should be thus permitted to recommend proper prenatal care, and detect early signs of impending danger.

In infant and preschool care, we urge that infants in the most dangerous time—during the first year of its life—be checked periodically, and its formula changed frequently to insure proper nutrition. We urge immunizations at the times when they will be most effective. We take special care to give all possible help in this age group. Babies must be protected if we would have healthy men and women.

We urge and provide for special check-ups for preschool children, and also the periodic checking of all school children. We give attention to the school grounds and buildings, for here the school children must spend the greater part of five days each week over a period of many months each year.

5. *Public Health Nursing.* Public health nursing services are required in all the many phases of health department activities. They are very necessary in all work seeking to prevent communicable diseases, and to promote school health, and hygiene of the school and the home. Home visits are made for educational purposes, and demonstrations of nursing techniques, and bedside nursing care. Theoretically, and we

think actually, one nurse is needed for every 2,000 people in a community.

6. *Public Health Education.* In the earlier days of public health work relatively little was accomplished in dealing with the adult population in matters of health promotion. People react favorably to a new idea and program only after they understand thoroughly what it is all about, and why it is better than that which has been. This is a natural human reaction, and we see it in every field of human activities.

A continuous over-all program of health education is necessary to a realization of maximum results in public health activities. Every possible aid in the efforts to influence people for the control of diseases, and the promotion of health, must be utilized. We have been, and are now, using motion pictures, radio, newspapers, pamphlets and booklets, public addresses before larger and smaller groups, and personal contact with representative leaders. Health departments are ready and eager at all times to assist organizations or groups, large and small, where we find an interest. We can help them prepare programs, provide speakers, and in many other ways, to make their number and their communities more conscious of the need for greater progress in promoting the public health.

7. *Vital Statistics.* Vital statistics are often called "human bookkeeping of a community." When vital statistics are properly interpreted they serve as an index of the success or failure of the public health services.

According to our State laws, physicians must report certain diseases. It is also required by law that all births and deaths be reported and registered. A study of this volume of reports, and a careful interpretation of them, is a great aid to the local health officer in his program of preventive measures. Through them he may be able to put proper emphasis on certain local problems revealed by the statistics.

8. *Industrial Hygiene.* Experiences keep on teaching the necessity of protecting and promoting the health of all workers. Laboring people represent a large percentage of Alabama's total population. Industry has learned that good health among its workers pays large dividends. Many of them have developed creditable health programs. Some

smaller industrial plants are not able to do this. The local health officer will gladly give valuable assistance to groups of industrialists in the development of co-operative health programs.

9. *Nutrition.* State Health Department executive officers have learned that it is a mighty good thing to give all possible assistance to every effort for the promotion of measures looking to the solution of the problems of good nutrition. The early indications of nutritional deficiencies give the physician an opportunity to take steps to correct this condition before real damage is done. Science and experience have taught us that it is not the amount of food one eats that gives him good nutrition. The vitally important thing is the eating of the right kind of food. Observations have shown that, regardless of the economic status, we often find a considerable amount of malnutrition. Some of the most outstanding cases of malnutrition are found in families where there is the greatest amount of food. The basic problem of health workers, and especially health educators, is that of correcting the eating habits of individuals, and sometimes it involves whole families. Good nutrition calls for the proper kinds of foods, rightly balanced, and eaten at regular intervals.

10. *Dental Hygiene.* The Alabama State Health Department has always advocated the best that can be had in the field of dental hygiene. Unfortunately we are unable at this time to have a director of dental hygiene at the state level, but we have dental hygiene clinics operating in a number of counties, and we propose to add to the number of such clinics just as fast as we can have the clinicians to operate them. Results of various surveys have shown that there are a large number of our children affected with dental decay. It has been definitely established that frequent visits to the dentists, begun at an early age and kept up, will cut down the cost of dental care, and at the same time promote the health of the child.

11. *Gereology.* This is a comparatively new word to many people. Gereology is the science that deals with old age and its phenomena. Your State Health Department does not have at this time a division or department of Gereology. However, we have

the most profound interest in conserving the years of those who have labored well and are now subject to certain degenerative diseases. Public health efforts have increased the life span $15\frac{1}{4}$ years since the beginning of this century. Dr. Louis I. Dublin, chief statistician of Metropolitan Life Insurance Company, told us in 1943 that the present life expectancy has been raised to $64\frac{1}{2}$ years. This means that more people are living in an age where degenerative diseases may attack. We are anxious that these older people shall have regular medical examinations.

This paper has been inspired by, and in many points is almost an exact duplication of a folder recently distributed by the Connecticut State Health Department, under the title, "What Your Health Department Does to Protect Your Health." Credit is hereby given the Connecticut State Department of Health for all that its folder has brought into this message.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

July 1947

Examination for diphtheria bacilli and Vincent's	252
Agglutination tests (typhoid, Brill's and undulant fever)	1,484
Typhoid cultures (blood, feces and urine)	1,397
Examinations for malaria	1,065
Examinations for intestinal parasites	2,569
Serologic tests for syphilis (blood and spinal fluid)	27,143
Darkfield examinations	34
Examinations for gonococci	3,702
Examinations for tubercle bacilli	2,363
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	109
Water examinations	1,606
Milk and dairy products examination	3,092
Miscellaneous	462
Total	44,279

Centennial Postage Stamp—The three cent stamp issued by the Post Office Department of the United States in commemoration of the work of the physician is a tribute every member of the medical profession appreciates. Great interest attached to the issuing of this stamp as a part of the celebration of the birth of the American Medical Association one hundred years ago, and special ceremonies marked its advent.—*J. Florida M. A., Aug. '47*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND
DEATHS FROM CERTAIN IMPORTANT CAUSES
APRIL 1947, AND COMPARATIVE RATES FOR
1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During April 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	6789	**	**	27.5	20.4	23.8
Stillbirths	209	**	**	29.9	37.7	30.6
Deaths, exclusive of stillbirths	2288	1374	914	9.3	8.0	7.9
Infant deaths:						
Under one year	281	162	119	41.4	44.9	43.1
Under one month	182	105	77	26.8	30.4	30.4
Typhoid and paratyphoid 1, 2						0.4
Epidemic cerebrospinal meningitis 6					0.8	2.0
Scarlet fever 8						
Whooping cough 9	11	7	4	4.5	0.4	2.9
Diphtheria 10	3	2	1	1.2		0.4
Tuberculosis, all forms 13-22	104	44	60	42.1	40.5	40.5
Malaria 28					1.6	
Syphilis 30	24	6	18	9.7	10.9	9.4
Influenza 33	68	31	37	27.6	12.6	15.1
Measles 35	9	7	2	3.6	6.5	0.4
Poliomyelitis 36	1		1	0.4	0.4	0.8
Encephalitis 37						
Typhus fever 39	1	1		0.4	0.8	0.8
Cancer, all forms 45-55	209	158	51	84.7	72.9	65.9
Diabetes mellitus 61	33	21	12	13.4	9.7	10.6
Pellagra 69	9	7	2	3.6	3.8	2.9
Alcoholism 77	2	1	1	0.8	0.8	0.4
Intracranial lesions 83	239	132	107	96.9	76.6	83.9
Diseases of the heart 90-95	480	311	169	194.5	173.0	167.0
Diseases of the arteries 96-99	23	15	8	9.3	8.5	6.1
Bronchitis 106	1	1		0.4	2.0	1.2
Pneumonia, all forms 107-109	123	70	53	49.8	40.1	29.5
Diarrhea and enteritis, (under 2 years) 199	2	1	1	0.8	4.9	4.5
Diarrhea and enteritis, (2 and over) 120	3	2	1	1.2	0.8	
Appendicitis 121	11	8	3	4.5	4.5	6.1
Hernia and intestinal obstruction 122	23	12	11	9.3	7.7	4.5
Cirrhosis of the liver 124	12	8	4	4.9	6.1	3.3
Nephritis, all forms 130-132	155	95	60	62.8	59.2	64.7
Diseases of puerperal state 140-150	19	7	12	27.2	24.9	28.3
Puerperal septicemia 140, 142a, 147	5	1	4	7.1	11.5	6.7
Suicide 163-164	16	12	4	6.5	7.3	5.7
Homicide 165-168	31	5	26	12.6	11.8	11.5
Accidental deaths, exclusive of motor vehicle 169, 171-195	98	69	29	39.7	40.1	34.0
Motor vehicle 170	47	36	11	19.0	16.2	13.5
All other known causes	364	244	120	147.5	119.6	125.7
Ill-defined and unknown causes 199-200	167	61	106	67.7	58.8	72.0

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; deaths from specified causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the April report of the years specified.

**Not available.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Acting Director

CURRENT MORBIDITY STATISTICS

	May	June	E.E.* June
Typhoid	4	2	12
Typhus	19	14	26
Malaria	71	57	39.3
Smallpox	0	0	1
Measles	1201	510	361
Scarlet fever	34	11	30
Whooping cough	427	232	170
Diphtheria	21	6	18
Influenza	581	24	61
Mumps	159	57	91
Poliomyelitis	2	5	8
Encephalitis	0	0	1
Chickenpox	308	35	45
Tetanus	4	2	5
Tuberculosis	314	386	253
Pellagra	4	3	18
Meningitis	10	7	14
Pneumonia	255	93	149
Syphilis	2670	1649	1448
Chancroid	26	17	10
Gonorrhea	859	837	482
Tularemia	0	2	0
Undulant fever	6	15	5
Amebic dysentery	1	1	0
Cancer	260	270	0
Rabies—Human cases	0	1	0
Positive animal heads	48	36	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past 9 years.

BUREAU OF SANITATION

A. N. Beck, M. S. in S. E., Director

THE SIGNIFICANCE OF COLIFORM BACTERIA IN MILK

Contributed by

U. D. Franklin, B. S., M. S.
Chief Sanitarian

For many years the problem of coliform bacteria in milk has been of real concern as related to public health. Numerous articles have been published dealing with the organisms and their public health significance and yet permissible standards and interpretations of tests are at wide variance.

The question is often asked "What is the enforceable standard for coliform organisms?" Obviously from a public health viewpoint the standard should be zero. Fortunately, in most instances, such a standard can be accomplished by the use of ordinary sanitary methods of production and processing of milk. The control of coliform organisms requires the same sanitary practices which control the total bacteria content. It does not constitute a separate problem.

In raw milk, high coliform counts would indicate that undesirable methods were used in production at some stage. Either the milk has been grossly contaminated in the milk-

ing barn or dirty utensils have been used. Poor refrigeration may also be responsible for high counts, since temperatures above 50°F. permit the growth and multiplication of such organisms along with other types of bacteria. Consequently, the coliform count on raw milk in reality is no better as a sanitary index than the total count since the same factors usually are responsible for high counts in either or both. The growth of organisms in unclean utensils and milking machines and the lack of proper refrigeration are usually the principal causes for high counts.

Coliform bacteria are found in cow manure and human feces as well as elsewhere. They may be found widely distributed in the barn and its surroundings. However, the presence of coliform bacteria is not a direct indication of manurial contamination, but is rather to imply that more care is needed in carrying out the sanitary measures involved in milk production.

The presence of coliform organisms in pasteurized milk is generally considered as evidence of recontamination after pasteurization. Research over a period of years indicates that properly pasteurized milk rarely if ever shows coliform bacteria in ml. samples. However, if the test is positive for coliform, it is an indication of either faulty pasteurization or recontamination thereafter.

The control of coliform contamination of milk on the dairy farm can be accomplished through strict adherence to sanitary measures applicable to the production and handling of milk. From the milk plant operator's standpoint, this means an active quality control program with the producers. In fact, laboratory pasteurization tests may be needed to round out such a program where extremely high counts are encountered. The dairyman must be interested in producing a quality product. This can be accomplished through the use of recommended procedures now available in the cleaning and sterilizing of all milk utensils, strainers, coolers, milk cans, and milking machines used in the milking and milk handling operations. Measures to minimize the dust hazard must be employed to prevent contamination within the barn. Clean milking practices must be followed, including the washing of the udders and teats of all cows. An intelligent

use of the single-service filter disc can be of value in determining how well the job is being done. This should be a gauge of cleanliness of production.

Good cooling practices must be followed for coliform control as well as for that of quality. The coliform group of organisms multiplies rather rapidly in uncooled milk, therefore quick cooling of milk to 50°F. or below is most important since coliform bacteria may be responsible for off-flavors in raw milk supplies. They can produce the flavors known as cowy, barny, and unclean; and may cause souring or even gas formation.

Proper pasteurization by either the holding or high-temperature short-time method renders milk negative to the coliform test. If and when the test is positive for coliform, it becomes necessary to check the process of operation to determine the source of contamination.

Defective equipment, such as leaky inlet and outlet valves, submerged inlet pipes without air relief ports, improperly fitted vat covers, the lack of effective air space heaters, improperly registering indicating and recording thermometers, leaky coolers, bottler and coolers without proper covers, open seams and improperly fitted pipe connections, old or spongy rubber bottler valve seats, and the lack of overhead shields on conveyors for bottles from washer to filler, may be a source of coliform contamination.

Improperly cleaned and sterilized equipment, including the pasteurizing vat, pipe lines, coolers, fillers, homogenizers, pumps, contamination of equipment when assembling, and the lack of facilities for workers to wash and rinse their hands frequently in a bactericidal solution, can be considered the greater potential sources for contamination. The control of coliform contamination depends upon care and precision in carrying out the cleaning and sterilizing operations at the dairy or milk plant. It means thorough training and supervision of the dairy and milk plant workers and the use of properly designed and constructed equipment.

Coliform organisms come from dirt and the intestines of animals and man. It is therefore of utmost importance from the standpoint of public health that proper precautionary measures be followed in the production and processing of milk for the elimination of such organisms.

BOOK ABSTRACTS AND REVIEWS

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1946. Cloth. Price, postpaid, \$1.00. Pp. 135. Chicago: American Medical Association, 1947.

This volume was formerly of most interest to those who wished to know why the Council on Pharmacy and Chemistry had not accepted certain of the preparations it had considered. The reports were mainly those of rejection; though, through the years, the educational nature of the Council's work was attested by status reports on drugs, or therapeutic procedures, or preliminary reports on agents showing promise of usefulness but not yet ready for adoption by the general and medical profession. In recent years, the tendency has been toward a preponderance of the educational type of report. In the present volume, both the condemnatory and the educational phases of the Council's work are represented.

There are three reports of vigorous condemnation: first, the report on Cabasil, a curiously unscientific mixture whose exploitation for use in a multitude of diseases is aptly summarized by the subtitle of the report, "Quackery Unlimited"; second, the report on the pseudo-scientific Ethylene Disulphonate (Allergosil brand), a preparation of highly uncertain nature exploited to physicians for use in allergic conditions; third, Formula A-N-1, a joint report of the Council on Pharmacy and Chemistry and the Council on Industrial Health, concerning an expensive but poor substitute for aspirin and citrate of magnesia, cleverly promoted to industrial concerns for use in reducing absenteeism due to colds.

Among the status reports, the excellent article of Dr. Samuel M. Feinberg, "Histamine and Antihistaminic Agents," is probably most worthy of mention. Since its appearance, the Council has accepted for inclusion in New and Nonofficial Remedies the two new agents of this class evaluated in the article, Diphenhydramine Hydrochloride and Tripeleminamine Hydrochloride (Benadryl Hydrochloride and Pyribenzamine Hydrochloride, respectively).

Pharmaceutical and scientific investigators, alike, will be interested in the informative report on the Council's new Therapeutic Trials Committee. Of special interest to manufacturers is a statement on the revised rules of the Council, though this exposition of the trends of Council policy is of concern to all who are interested in progressive rational therapeutics.

Attention is called to the several reports on the adoption of generic designations for drugs proposed or marketed under protected names. Not all such actions of the Council have been the subject of separate published reports; the recognized terms have appeared in the published descriptions of the drugs when accepted, and will be inserted in another Council publication, New and Nonofficial Remedies, as adoption of such

designations for already accepted protected names proceeds.

A. M. A.

Surgical Pathology. By William Boyd, M. D., Dipl. Pysch., M. R. C. P. Ed., F. R. C. P. Lond., LL. D. Sask., M. D. Oslo, R. R. S. C. Professor of Pathology, The University of Toronto, Canada. Sixth edition. Cloth. Price \$10.00. Pp. 858, with 530 illustrations, including 22 color figures. Philadelphia and London: W. B. Saunders Company, 1947.

Doctor Boyd's Surgical Pathology is now being published in its sixth edition. It is an easily read book, free of unnecessary material and, though making no effort to cover each subject in minute detail, it discusses each topic with a degree of thoroughness that has made it a standard textbook of surgical pathology for many years. Those who require additional information in any special field will find an excellent bibliography at the end of each chapter.

Among the various sections of this book which deserve special comment are those devoted to intravascular clotting, its pathogenesis and clinical picture; and those dealing with diseases of the breast, which subject has been one filled with confusion but which is, in this book, made to appear clear and simple.

There is a considerable amount of new material, including sections on laryngeal tumors, Bittner's milk factor in relation to carcinoma of the breast, avitaminosis in carcinoma of the mouth, the Papanicolaou vaginal smear method in diagnosing carcinoma of the uterine cervix and many others. The otologist will be interested in the chapter dealing with middle ear infection. There is a very interesting section on congenital heart disease—pulmonary stenosis, patent ductus arteriosus and coarctation of the aorta, with emphasis on the pathological physiology and the rationale of surgery.

The pages of the book are profusely illustrated, many of the illustrations being in color. It is written in such a manner as to appeal not only to the surgeon but to any practitioner of medicine whose knowledge can be improved by a better understanding of pathology.

Clarence K. Weil, M. D.

The Head, Neck and Trunk, Muscles and Motor Points. By Daniel P. Quiring, Ph.D., Head of the Anatomy Division, Cleveland Clinic Foundation, and Associate Professor of Biology, Western Reserve University, Cleveland, Ohio. Cloth. Price, \$2.75. Pp. 115, with 103 illustrations. Philadelphia; Lea and Febiger, 1947.

This book is primarily a study in regional anatomy, each page containing a single illustration of a muscle or small group of muscles, show-

ing the origin, insertion, nerve and blood supply. Each structure is carefully labeled. In addition, the function of the muscle is also defined.

The volume covers the muscles and motor points of the head, neck and trunk. The drawings are very well executed and accurate, with both Gray and Cunningham as references.

There is a complete index, which facilitates the reader in obtaining specific information quickly. The book should be extremely helpful as a quick, clear anatomical reference for the surgeon. The orthopedist should find it useful in the study of muscle function.

Franklin Jackson, M. D.

Gynecology. With a Section on Female Urology. By Lawrence R. Wharton, Ph. B., M. D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second edition. Cloth. Price, \$10.00. Pp. 1027, with 479 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

Wharton's new edition on Gynecology is a book which should appeal to general practitioners, surgeons and gynecologists. It is written in a manner which shows that the author is an excellent teacher. It contains a minimum of controversial or extraneous material. Although one can find nothing lacking in the subject matter, one is surprised how brief is the space devoted to each particular topic.

The surgeon and gynecologist will be interested in the detailed and well illustrated description of operative procedures. The gynecologist and general practitioner will find that gynecology is not only a surgical art but that much of it falls within the sphere of medicine and particularly of preventive medicine. For example, there is a chapter devoted to the care of normal women and another on the prevention of gynecological disorders.

As an illustration of the author's capacity as a teacher, two descriptions stand out. One is a quotation from Osler in discussing the diagnosis of masses in the abdomen in which he urges that one always remember the 5 F's—flatus, fetus, fat, fluid and feces. The other example is a quotation from Novak: that there are eleven causes of puerperal infection, namely, the ten fingers and the nasopharynx.

The author stresses the greater accuracy of cultural methods over smears in the diagnosis of gonorrhea in women, the use of podophyllin in oil in the treatment of venereal warts, chemotherapy in genito-urinary infections, the early diagnosis of cancer and the treatment of sterile marriages.

The close relationship of the female urethra to the female reproductive tract has persuaded the author of the wisdom of including a chapter on this part of the body and a large section has been devoted to the subject of indirect or water cystoscopy. This section of the book which deals with the female urology should appeal to the

urologist. The book is a good one and is recommended to all those who treat women.

Clarence K. Weil, M. D.

New and Nonofficial Remedies, 1947. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1947. Cloth. Price, postpaid, \$3.00. Pp. 749. Philadelphia: J. B. Lippincott Co., 1947.

Although the latest edition of New and Non-official Remedies has some eleven pages fewer than the 1946 book, its increase in size, due to the heavier paper used, and its change of color—dark green to bright red—combine to make a striking contrast with the earlier annual volumes. The book is now published by J. B. Lippincott and Company, though it is still issued under the direction and supervision of the Council on Pharmacy and Chemistry. Another innovation is the relegation of the statements of texts and standards to the back of the book, which makes the text more convenient and usable for the physician for whom it is primarily intended. It is understood that supplements to the annual volumes will no longer be issued. The physician who is interested in current acceptances can keep track of these as the descriptions are published in the Journal of the American Medical Association, or may inquire about them by addressing the Council's office at A. M. A. headquarters. Several medical and pharmaceutical journals now carry lists of currently accepted products.

There appears to be no very extensive revision in the various general articles or chapter head discussions although several new monographs have made their appearance and others have been revised to reflect current medical opinion. One notes the appearance of a new chapter, "Unclassified Therapeutic Agents," which includes the monographs on gold compounds and iodine compounds for systemic use. This is in line with the policy adopted some years ago of classifying accepted preparations according to pharmacologic action and therapeutic use.

Attention is called to the amplification and indexing of the section devoted to the statement of the Council's rules. This should be of great assistance to manufacturers in the presentation of products for Council consideration and is no doubt inspired by the recent marked increase in the number of pharmaceutical concerns asking Council recognition.

The descriptions of some thirteen new preparations appear in this volume. This excludes, of course, brands or dosages of already accepted agents. Among those preparations noteworthy of mention are the pertussis vaccines and vaccines representing combinations of pertussis with diphtheria and tetanus organisms; the new histamine-antagonizing agent, Benadryl Hydrochloride Elixir (Diphenhydramine Hydrochloride Elixir); Furacin (Nitrofurazone), a new topical anti-infection agent; Streptomycin; Heparin Sodium; Parenamine, a new casein hydrolysate; Thiouracil, an antithyroid agent; Naphuride Sodium (Suramin Sodium) a new trypanocide; and

Tuamine (racemic 2-aminoheptane), a new vasoconstrictor. One notes the increasing appearance of generic designations in conformance with the revised Council's rules on acceptance of agents bearing protected or trademarked names.

New and Nonofficial Remedies remains a most

valuable and authoritative compendium of modern rational therapeutics. With successive editions, it becomes more useful and accessible to the physician and to all those interested in the use, preparation, or manufacture of drugs.

A. M. A.

AMERICAN MEDICAL ASSOCIATION NEWS

AVERAGE LENGTH OF LIFE SINCE 1847 INCREASED FROM 40 TO 67

**A. M. A. PRESIDENT SAYS AMERICAN MEDICINE "IS
BLAZING NEW TRAILS"—WORKING TO
IMPROVE HEALTH OF ALL**

"In 1847 the average length of life of our people was about 40 years; in 1947, this has increased to almost 67 years. Such an accomplishment may be regarded as one of the major attainments of modern science," according to Edward L. Bortz, M.D., President of the American Medical Association.

Writing in the current issue of *Hygeia*, health magazine of the American Medical Association, Dr. Bortz points out that "medical science in the last 25 years has discovered remarkably effective weapons for the control of infectious diseases. Important new information with reference to nutrition, disorders of the glands, the control of diabetes and obesity, and our knowledge of various nervous and mental disorders have made the doctor a more effective public servant than in any previous time in the history of humanity.

"We are indeed a more healthy people today. We are living longer. The mature and productive years are increased in number, and the ravages of old age may be delayed if the public will cooperate with the medical profession in utilizing available information for the control of the diseases which are the common lot of all people."

Continuing, the article states in part:

"Probably no other group has a keener sense of social responsibility than has the medical profession . . . More and more attention is given to the preventive aspects of disease. This includes an appreciation of nutritional requirements of the body, plus a number of other important necessities, such as rest, recreation and healthy mental outlook. These factors represent some of the principal interests of the modern doctor.

"Organized medicine has always been a strenuous exponent of the highest type of

medical service for all people, regardless of financial status. The unsolved questions of an economic nature are being approached with the same sense of scientific objectivity, free from emotional heat, as science utilizes in its laboratories and clinics.

"To facilitate international exchange of health information, the control of disease, and medical research, a world medical association is now in process of formation. American doctors are deeply interested in this worthy project. Recently two distinguished members of the Board of Trustees of the American Medical Association flew to London to attend an organizational meeting with representatives of other lands.

"As international bonds are strengthened in the fields of science, medicine, the arts, and culture, a better understanding will be brought about for people of the various nations of the world. As leaders in the medical realm communicate with one another across national boundaries, they bring to their own people the benefits of research and investigations in the fields of medical science which will improve the health of various populations. When folks understand each other and contribute to the welfare and happiness of members of the family of nations, the irritations and misunderstanding that cause so much unhappiness should be more susceptible of compromise.

"Doctors are vitally interested in the broader problems of national security and international stability. The American Medical Association is vigorously engaged in promoting the dissemination of information that will improve the health of the people of all nations.

"American medicine is blazing new trails; it is moving in forward directions to a day of better understanding and finer health for people near and far. The leaders of medicine in the United States, supported by

a superb staff of highly qualified colleagues and experts in the various special fields of administration, health education, medical economics, legislation and research, are throwing all their energy into the search for more adequate control of the disorders that destroy health and shorten life.

"The American people can rest assured that the doctors of the nation will continue to find new methods for the control of disease, improved measures for the public health, and an enlarged scope for the enjoyment of human existence. To these high aims the American Medical Association dedicates its interests and support."

NEW FACTS REVEALED IN STUDY OF PULMONARY EMBOLISM PATIENTS

A 10 year study made by four Boston physicians reveals that contrary to general opinion pulmonary embolism—plugging of the lung artery or one of its branches by a blood clot—occurs more frequently among medical patients than among surgical patients.

The physicians—Jacques Carlotti, Irad B. Hardy, Jr., Robert R. Linton, and Paul D. White, from the medical and surgical departments, Massachusetts General Hospital—point out that during the 10-year period, 1936 to 1945, "although there were actually more than twice as many surgical cases (98,642) as medical (45,523), [at the Massachusetts General Hospital] more than half (53.4 per cent) of all the patients with pulmonary embolism were medical (273 as compared to 238 surgical)."

The study, appearing in the August 23 issue of *The Journal of the American Medical Association*, was divided into two five year periods: group A, 122 cases of pulmonary embolism occurring during 1936 to 1940, and group B, 151 cases from 1941 to 1945. Male patients predominated, state the physicians, making up 56.5 per cent of the first group and 60.3 per cent of the second. The great majority of the patients were over 40 years of age (83.8 per cent), and over half were from 50 to 70 years of age. Also, the majority of patients had heart disease (59 per cent in group A and 70.8 per cent in group B).

Since the blood clots have been found to originate in the leg, the physicians advocate cutting the femoral vein, the chief vein of

the thigh, to prevent the clot from being carried by the blood stream to the lungs and possibly causing death.

This operation was performed on 60 patients in group B of which 17 died. In the 91 patients of group B who were not operated on plus the 122 patients of group A, a total of 213 cases, there were 108 deaths. The mortality rate for this operated group is therefore 28.3 per cent and that for non-operated cases 50.7 per cent.

"We consider that this method of treatment has been of definite significance in reducing the death rate from pulmonary embolism in medical patients," state the physicians.

50 PER CENT OF POPULATION SUFFERS AT SOME TIME FROM ALLERGY

Allergy specialists estimate that 50 per cent of the population suffers at one time or another from a mild form of the disease. Half of these cases could be avoided by proper preventive measures, according to an article in the current issue of *Hygeia*, health magazine of the American Medical Association.

The author—William G. Roberts of New York—explains that "acquired allergy is caused by proteins that refuse to be digested. They fight to get out of the digestive tracts and into the bloodstream. Or else they try to enter the bloodstream through various natural portals, such as the nose. Once these proteins escape into the bloodstream they may form what are called antibodies. They fix themselves tightly to a cell in the body and wait for some of their old relatives. When one of their former brothers, a protein of the same type they once were, enters the body and comes in contact with them, the antibodies put on a great battle. The human being sheltering these enemies in his bloodstream then shows allergic symptoms."

The period before birth, infancy and childhood are stressed as the danger periods for picking up allergies. A person is also vulnerable during illness and convalescence.

The author lists the following ways that a child may become allergic: Food allergies: By overindulgence of cravings, or excessive eating, on the part of the expectant mother.

By allowing the infant to take, or giving the infant, any food in excess.

By the introduction of new foods, particularly certain allergenic foods (raw eggs, raw meats, raw vegetables, fruits and cereals) during periods of severe gastrointestinal disturbances such as diarrhea, dysentery and typhoid fever.

By introduction of new foods and allergenic foods during convalescence from those diseases, and other illness; and following surgery.

Dust and pollen allergies: By heavy exposure to specific dust or pollen allergens.

Drug allergies: By drugs administered in large doses; and by intense treatment by drugs.

By indiscriminate use of external medications for the skin.

Horse serum allergies: By inhalation of horse dander; by eating of horse flesh and by repeated injections of antisera containing horse serum.

The following preventive measures are recommended by leading American pediatric allergists:

Food allergies: Women during pregnancy should eat a well balanced diet, without excesses, particularly of allergenic foods; raw foods should be avoided during convalescence from disease, and during disease and convalescence, the infant and young child should have only food denatured by cooking, given in small quantities and well diversified.

All new foods should be given regularly when once started. If a new food is introduced it should be fed the child again within three to seven days, and at comparable intervals from then on until he has developed thorough tolerance for it.

Dust and pollen allergies: Environment is the danger here. Attention first must be given the nursery. It should be furnished simply, without hangings or heavy rugs. Everything in it should be washable so that cleaning can be done without raising much dust. Articles such as down and feather pillows, comforters and overstuffed furniture, which produce dust, should be eliminated altogether or reduced to a minimum.

The author points out that "infants who sleep with pets or stuffed woolly toys and those who bury their heads in the bedding may be disposed to develop allergy."

Drug allergies: Drugs should not be given the infant or child indiscriminately,

or in large doses. Unfortunately this is being done with sulfa and penicillin drugs today. Many cases of allergy to these new drugs already have been reported.

Horse serum allergies: All children should be immunized with diphtheria and tetanus toxoid and given booster doses of toxoid when necessary thus eliminating the need for horse serum antitoxin.

RATES PENICILLIN SUPERIOR TO SILVER NITRATE FOR EYES OF NEWBORN

A Memphis, Tenn., physician points out that penicillin is superior to silver nitrate in preventing the development of inflammation of the eyes of newborn infants.

Writing in the August 9 issue of *The Journal of the American Medical Association*, H. Charles Franklin, M.D., from the Department of Obstetrics and Gynecology, the University of Tennessee College of Medicine, presents a comparative study of 1,710 infants, 961 of whom were given penicillin and 749 silver nitrate.

Twenty (2.1 per cent) of 961 infants exhibited pus in one or both eyes during or after receiving penicillin drops and 45 (6.0 per cent) of 749 exhibited pus after silver nitrate.

Abnormalities other than the presence of pus were noted in each group, states Dr. Franklin. Swelling of the eyelids was noted in 31 per cent of infants after penicillin application and in 58 per cent after silver nitrate. Redness of the delicate lining of the eyelids was seen in 42 per cent after penicillin and in 72 per cent after silver nitrate. Watery discharge was least frequent and occurred in two per cent after penicillin and in 10 per cent after silver nitrate.

Although the silver nitrate drop method is the most popular today, the physician points out that "silver nitrate is irritating to the extent of pus formation is confirmed by the fact that a high percentage of infants in the group receiving silver nitrate prophylaxis exhibited pus on the day of birth and the first day of life. Likewise a high percentage of those infants exhibiting other abnormalities at this time was probably due to this irritation". The author adds that "instances are recorded of infants being made blind by the use of a solution too high in concentration."

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

October 1947

No. 4

ARRHENOBLASTOMA

WITH CASE REPORT

JULIAN P. HARDY, M. D.

Birmingham, Alabama

And

ARTHUR F. TOOLE, M. D.

Talladega, Alabama

It is worth while to refresh our memories by beginning with a definition of arrhenoblastoma. The word arrhenoblastoma is derived from three Greek words meaning male germ tumor, and an arrhenoblastoma may be defined as an adenoma of the ovary with cells resembling those of the testicle and producing masculine sexual secondary characteristics.

Though this type of tumor is encountered infrequently, it was felt that a limited review of the subject would be of interest both because of its clinical manifestations and the question of its origin. Rather than allow oneself to become hopelessly befuddled with theories as to origin and with the finer details of the microscopic pathology, this paper will be confined to a general discussion.

The adult ovary is the site of origin of more tumors differing histologically one from another than probably any other organ. Of the entire group of ovarian tumors, the arrhenoblastoma is unquestionably among the rarest. Roughly, one out of each one hundred solid tumors of the ovaries is an arrhenoblastoma. It was first classified by Robert Meyer in 1931 and given the name arrhenoblastoma because of its masculinizing influence. To date, approximately 75 to 80 cases have been reported.

While there are several schools of thought concerning the origin of these tumors, only the two most widely accepted views will be mentioned here. Meyer and Novak are inclined to the belief that arrhenoblastomas arise from latent male elements remaining in the rete ovarii. It is well known that embryologically the ovaries, testes and adrenal cortex have a common origin, namely, the coelomic epithelium of the urogenital fold. Later in embryonic life this urogenital fold divides into the adrenal cortex and the gonads. As for the gonadal portion, it is impossible at this stage of development to determine by microscopic examination, or by any other means for that matter, whether it is to form ovary or testicle. Later a stage occurs in which the cells of the gonads arrange themselves into medullary cords. In the male, these cords eventually form the seminiferous tubules; on the other hand, these cords disappear in the developing ovary although rests may persist in the ovarian hilum in the rete ovarii. This concept would be easier to accept if it went further and explained why cells which have lain dormant for years suddenly begin to grow and outstrip the surrounding normal ovarian tissue.

Kroch and Wolferman feel that the tumor may have a teratomatous origin. They base their belief on the fact that in 34 per cent of the cases more than one of the tridermal

tissue elements can be demonstrated. They feel that careful study of serial sections might reveal this to be true in a much larger percentage of the cases. It is suggested that a teratoma has been present but that there is a relative overgrowth of functioning testicular tissue with sarcomatous degeneration of the other elements. There are a number of cases reported in which evidence supporting this concept is given.

The gross pathology is not particularly diagnostic. As a rule, the tumor is of relatively modest proportions, measuring only a few centimeters in diameter. Occasionally they may be 20 to 25 centimeters in diameter. The surface of the tumor is smooth and grayish-white in most instances. Cut surface presents a homogeneous appearance, grayish in color, often with a yellowish hue. Cystic degeneration is a frequent finding. The degree of degeneration generally corresponds to the size of the tumor. The small tumors are apt to be solid, whereas the larger ones are more apt to show cystic degenerative changes.

Microscopic examination may show no uniformity. In fact the opposite is frequently encountered, hence leading to considerable difficulty in diagnosis. This stems from the fact that in some cases the tumor may be of a highly differentiated type in which there is an accurate reproduction of the testicular seminiferous tubules and interstitial cells. On the other hand, these structures may be so poorly differentiated that the microscopic picture may resemble sarcoma. In between is an intermediate group, with varying degrees of tubules and interstitial cell formation. Frequently there may be merely slender columns of cells with the nuclei transverse to the long axis of the cells of the columns. Lipoid-containing cells, suggesting interstitial cells, may or may not be present. Without benefit of the clinical history, microscopic diagnosis may be impossible.

The age incidence varies between the years of 20 and 40, with the peak between 30 and 40 years of age. One case in the 7th decade has been reported. The majority have usually had a normal menarche with a normal menstrual cycle for a number of years. Frequently there has been a normal pregnancy. Novak states in a paper published in 1938 that the clinical picture is

quite characteristically divided into a defeminization phase overlapped to a greater or lesser extent by a masculinizing phase. During the first—or defeminizing—phase, amenorrhea is noticed first in practically all cases. This is followed by an atrophy of the mammary glands and disappearance of the subcutaneous fat which gives the female figure its characteristic contour. The second—or masculinizing—phase includes hirsutism of varying degrees, hypertrophy of the clitoris and a deepening of the voice.

From what conditions must arrhenoblastoma be differentiated? There are four lesions to be considered. These are simple hyperplasia and adenoma of the adrenal cortex, basophilic adenoma of the pituitary, adrenal rest tumors and masculinizing luteomas of the ovary. Neoplasms of the thymus are occasionally mentioned. Why the latter are included by some writers is not clear to us as there is still no evidence to support the contention by some that the thymus has an endocrine function. Experimental work with rats has indicated that, though the sex hormones exert a definite suppressive action on the growth of the thymus, this is not a reciprocal physiological relationship. In any event, roentgen examination of the mediastinum may be of value in ruling out neoplasms of the thymus. The condition which most closely mimics arrhenoblastoma is an adrenal cortex tumor. Here there is amenorrhea, sterility, obesity, striation of the skin, marked hirsutism, hypertrophy of the clitoris and deepening of the voice. Obesity is not a common finding in arrhenoblastoma. There may be a palpable mass in the kidney region, and roentgen studies of the kidneys will be of help in ruling out adrenal cortex tumors. In ruling out basophilic adenoma of the pituitary, the usual obesity is of a Cushing's syndrome type, being confined predominantly to the trunk. Severe headaches may point to the pituitary. There is generally hypertension. Roentgen examination of the sella turcica is of help. The importance of basophilic adenomas as well as thymus neoplasms in producing a picture similar to arrhenoblastoma has been questioned recently. With both of these there is often found at autopsy an accompanying hyperplasia or adenoma of the adrenal cortex. On the other hand, two to three percent of the bodies which come to

autopsy have small basophilic adenomas without evidence of virilism. Adrenal cell tumors of the ovary are usually highly malignant, and a differentiation can be made only by microscopic examination. Masculinizing luteomas are considered by Novak and Schiller actually to be tumors of adrenal tissue in most instances. There are only three cases reported in the literature which are accepted as true masculinizing luteomas.

Once the diagnosis is made and the tumor has been removed, the clinical findings revert toward the normal in almost the same sequence as they appear. Menstruation returns first, generally within four to six weeks, the mammary glands increase in size, subcutaneous fat reappears and with it the normal feminine habitus, and the voice returns to normal. Last to disappear are the hirsutism and the hypertrophy of the clitoris.

Concerning prognosis, arrhenoblastomas must be considered as low-grade malignancies. Several cases have proved to be highly malignant with a rapid termination. Since these tumors were first recognized and classified only fifteen years ago and surgical treatment has been done mostly within the past ten years, it is as yet too early to evaluate accurately the clinical results afforded by removal. The great majority of the cases have remained well during a follow-up period of several years after removal of such a tumor.

CASE REPORT

History: A 46-year-old white female was admitted to the hospital in mid-December, 1944, with a chief complaint of moderately severe, generalized abdominal pain.

In 1930, at the age of 31, she began to notice vague lower abdominal discomfort located mainly in the left lower quadrant. Little attention was paid to it, but after about a year she visited a physician who told her that she had a cyst of the left ovary. No treatment was undertaken at that time. Menstruation was normal.

About 1936 she began to notice that her face was becoming somewhat hairy, and at the same time she felt that there was a diminution in the size of her mammary glands. These she attributed to advancing age, and again she paid little attention to the changes. In 1940 she entered the menopause and experienced menopausal symptoms for 12 to 16 months. Shortly thereafter she began to have increasing discomfort again in the lower abdomen with a sensation of pressure on the rectum, though she did not seek medical aid until nearly two years had elapsed. At this time she experienced such fatigability and lassitude that she consulted her physician.

Both the past and family histories were non-contributory. The menarche had occurred at the age of 15. The menses remained normal with respect to cycle, duration and amount of flow throughout active reproductive life. There had been two normal pregnancies and no miscarriages. Menopausal symptoms began in the forty-second year.

Physical Examination: Office examination approximately 48 hours prior to admission to the hospital revealed a well-developed, well-nourished, white female, apparently of her stated age. She was mentally alert and of more than average intelligence. Her weight was 130 pounds, blood pressure 138/76. Her voice was low pitched, though not particularly husky. Facial hirsutism was not noticeable, but there was a distinct increase in the amount of hair on the legs and forearms, and the body hair was of a masculine distribution. Except for the examination of the abdomen and pelvis, the rest of the physical examination was not remarkable. The abdomen seemed to be distended by a large cystic mass occupying the lower part of the abdomen and apparently rising to about the level of the umbilicus. This was moderately tender and partially fixed in position. No fluid wave could be elicited. The liver, spleen and kidneys were not palpable.

Pelvic examination revealed a parous introitus, normal to inspection, no hypertrophy of the clitoris, and a small, normally placed and freely movable uterus. The right adnexa were not remarkable. The left adnexa were full, and a large moderately tender, cystic mass could be felt extending from the left broad ligament upward into the peritoneal cavity. Rectal examination confirmed these findings.

Routine laboratory procedures revealed nothing of significance except for a mild anemia of 3.52 million red blood cells and a 72 per cent hemoglobin.

A diagnosis of cyst of the left ovary was made and surgery advised. To suit her convenience, the patient decided to postpone the surgical procedure for approximately ten days.

Subsequent Course: Within 48 hours following the office study, the patient experienced a sudden severe abdominal pain, originating in the left lower quadrant and spreading rapidly over the entire abdomen. Nausea and vomiting developed shortly, and the patient was hospitalized immediately.

On examination, the patient was found to be in mild shock with an anxious expression and complaining of considerable abdominal pain on movement of the body. Blood pressure was 120/64, pulse 108, respirations 22, and the temperature 102 degrees. The abdomen was definitely distended. No organs or masses were palpable, but a definite fluid wave could be elicited. Pelvic examinations revealed a full cul-de-sac.

Laboratory examination revealed a red blood cell count of 2.11 million, hemoglobin of 45 per cent, and a white blood cell count of 11,000 of which 84 per cent were neutrophils.

It was felt that the ovarian cyst had ruptured, leading to intra-abdominal hemorrhage. The

patient was transfused with 1,000 cc. of blood, and a laparotomy performed.

Upon entering the peritoneal cavity, a large quantity of blood and blood clot was encountered. This was suctioned off and a large collapsed cyst, originating from the left broad ligament, found. The uterus was small, and the right adnexa were grossly normal. Several small papillary growths were seen on the peritoneum in the immediate vicinity of the ruptured cystic structure. A bilateral salpingo-oophorectomy was done and the abdomen closed in layers without drain.

Hospital convalescence was uneventful, and the patient was discharged on the fourteenth day. She was referred for a series of deep roentgen therapy.

Pathological Report: (Extract)

Gross: Attached to the tube there is a large ruptured cyst, the approximate dimensions of which must have been in the neighborhood of 15 cm. On the outer surface no papillary implants can be demonstrated, although there are numerous adhesions. On the inner surface, however, there are numerous grayish-yellow papillary masses projecting into the lumen, and these, on section, have an extremely friable cut surface and appearance.

Microscopic: Section through the specimen shows a very cellular tumor, made up of small, more or less round, hyperchromatic cells with small round hyperchromatic nuclei. In places the tumor seems papillary, with vascular stalks of connective tissue supporting these cells. In other places there is a tendency to form long tubular structures. In several of the sections, aside from the cells already described, there are small nests of large pale-pink-staining cells with a granular cytoplasm and a round, sharply defined nucleus. These resemble the interstitial cells of the testicle. A comparison of the interstitial cells of the testicle and these cells in the tumor shows no visible difference. The cytoplasm of these cells is finely vacuolated, and there is some green-gold, refractile secretion between the cells and in the cells. The whole picture is that of a masculinizing tumor of the ovary of low-grade malignancy.

Diagnosis: Arrhenoblastoma of the ovary.

At present, two years following the operation, the patient is in good health, and none of the symptoms has returned. It is interesting to note that the abnormal growth of hair had begun to decrease before the patient was discharged from the hospital.

SUMMARY

A brief, general discussion of arrhenoblastoma is given.

In any female patient with a picture of defeminization and subsequent masculinization, arrhenoblastoma should be kept in mind and must be differentiated from adrenal cortex tumors, basophilic adenomas of the pituitary, adrenal cell tumors of the

ovary, and masculinizing luteomas of the ovary.

Following surgical removal of these tumors there is almost always a return to the normal feminine habitus.

Though usually of a low grade, arrhenoblastomas must be considered as malignant tumors and treated accordingly.

A case is reported in which a definite diagnosis of arrhenoblastoma of the left ovary was made on the basis of clinical picture and the microscopic examination.

BIBLIOGRAPHY

1. Boltuch, S. M.: Masculinizing Tumor of the Ovary (Arrhenoblastoma), *Am. J. Obst. and Gynec.* 39:857, May 1940.
2. Doughty, D. C.: Arrhenoblastoma, *Am. J. Obst. and Gynec.* 50: 539, 1945.
3. Douglas, Marion: Masculinizing Tumor of the Ovary of the Adrenal Type, *Am. J. Obst. and Gynec.* 53: 190, Feb. 1947.
4. Geist, S. H., and Gaines, J. A.: Diffuse Luteinization of Ovaries Associated with Masculinization Syndrome, *Am. J. Obst. and Gynec.* 43: 975, 1942.
5. Greene, H. J., and Lapp, W. A.: Adrenal Rest Tumor of the Ovary, *Am. J. Obst. and Gynec.* 47: 63, 1944.
6. Johnson, G. C.: Arrhenoblastoma of the Ovary, *Am. J. Obst. and Gynec.* 48: 728, Nov. 1944.
7. Kroch, Fred, and Wolferman, S. J.: Arrhenoblastoma of the Ovary, *Ann. Surg.*, 114:78. 1941.
8. Meyer, R.: Pathology of Some Special Ovarian Tumors and Their Relation to Sex Characteristics, *Am. J. Obst. and Gynec.* 22: 697, 1931.
9. McLester, J. B.: Arrhenoblastoma: A Special Type of Teratoma, *Arch. Int. Med.* 57: 773, 1936.
10. Novak, Emil: Masculinizing Tumors of the Ovary, *Am. J. Obst. and Gynec.* 36: 840, 1938.
11. Novak, Emil: Gynecological and Obstetrical Pathology. Philadelphia, W. B. Saunders Company, 2nd edition, 1947.
12. Novak, Emil, and Long, J. H.: Ovarian Tumors Associated with Secondary Sex Changes, *J. A. M. A.* 101: 1057, 1933.
13. Plagge, J. C.: The Thymus Gland in Relation to Sex Hormones and Reproduction Processes in the Albino Rat, *J. Morphol.* 68: 519, 1941.

A CORRECTION

In the September Journal, the first line of the last paragraph of Dr. S. A. Zieman's article should have read as follows: An anatomically perfect transversalis fascia comprising the internal ring is inconsistent with a hernia of the cord. On the other hand, the repair of this hernia, after the dissection, isolation, ligation and excision of the sac, involves the reconstruction of the internal inguinal ring.

THE IMPORTANCE OF FOLLOW-UP ROENTGENOGRAMS IN PULMONARY DISEASE

C. ALLEN GOOD, M. D.

Section on Roentgenology, Mayo Clinic

Rochester, Minnesota

Because of the effectiveness of the antibacterial agents in the treatment of certain pulmonary conditions the follow-up roentgenogram has assumed a new and added importance. Before the introduction of the sulfonamides, penicillin and streptomycin the clinical course of uncomplicated pneumonia was limited and fairly well defined while that of certain other lesions such as carcinoma was protracted and progressive. Follow-up roentgenograms were not thought to be necessary in the case of a patient who became clinically well after a period of a few weeks. Today, because the clinical course of both benign and malignant lesions can be altered by the administration of an antibacterial agent, it becomes necessary to follow the course of any pulmonary lesion with roentgenographic studies until the appearance of the lungs returns to normal or until some diagnosis other than pneumonia has been established which explains the persistence of the pulmonary lesion.

Experience has shown that the rapid clinical improvement which often occurs in a patient who has pneumonia after the administration of one of the antibacterial drugs is not accompanied by such a rapid improvement in the roentgenologic appearance of the lungs. Shadows may persist on the roentgenogram for some little time after the patient is clinically well, but if the disease is uncomplicated pneumonia the appearance of the lungs will probably return to normal in the usual period of two to three weeks. Any persistent pulmonary lesion therefore must be viewed with suspicion and an investigation must be begun to uncover its true nature.

On the other hand, the inflammatory reaction which frequently accompanies the bronchial obstruction caused by a lesion such as bronchogenic carcinoma may also improve after administration of an antibacterial drug. For this reason improvement in the roentgenographic appearance of a pul-

monary lesion cannot be taken in itself to be indicative of the benign nature of the process. Only by following the condition of the patient with repeated roentgenologic examinations until the appearance of the lungs returns to normal can one be sure of such a diagnosis.

The following reports of cases illustrate the necessity of a constant awareness of these facts on the part of the attending physician.

REPORT OF CASES

Case 1.—A man, sixty-four years of age, became acutely ill in November, 1946, experiencing chills, temperatures as high as 104° F. and expectoration of a small amount of white and yellow sputum. He entered a hospital, where a diagnosis of pneumonia was made. Figure 1a shows the roentgenogram of the thorax made at that time. Treatment with penicillin, streptomycin and one of the sulfonamides was instituted and he improved rapidly. Within a few days his temperature had returned to normal and a roentgenogram of the thorax showed a considerable decrease in the involvement of the lungs (fig. 1b).

A week or so after his dismissal from the hospital the patient began to have a moderate elevation of temperature each evening. A roentgenogram (fig. 1c) made four weeks after his last examination showed that the lesion in the base of the right lung was still present and that it had changed very little during the interval. Bronchoscopy performed at this time revealed a carcinoma at the junction of the bronchi to the right middle and lower lobes.

This case illustrates the fact that the inflammatory changes in a lung incident to bronchial obstruction by a carcinoma may mimic pneumonia, both in clinical course and in roentgenographic appearance. Response to antibacterial drugs was immediate and there was coincident roentgenographic improvement. The fact that this improvement did not continue until the appearance of the lungs returned to normal forced an investigation which uncovered the true nature of the process.

Case 2.—A man, fifty-two years of age, became acutely ill on May 1, 1944. He suffered from chills, fever and a dry cough. Ten days later he entered a hospital, where it was found that his temperature was 101° F., that there was dullness in the lower posterior portion of the right thorax

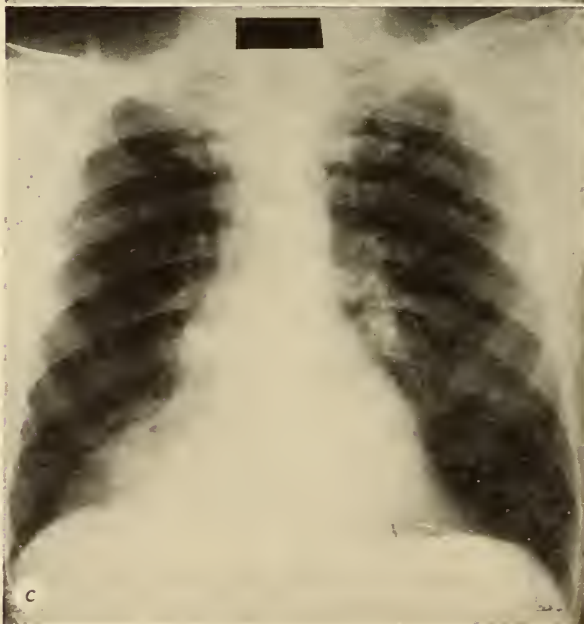
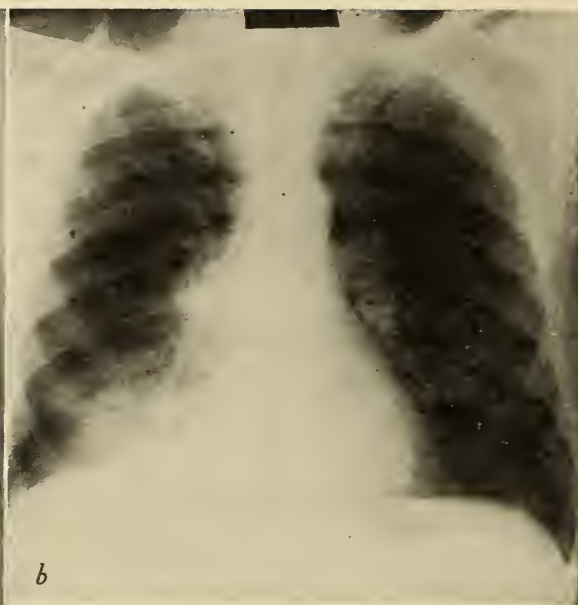
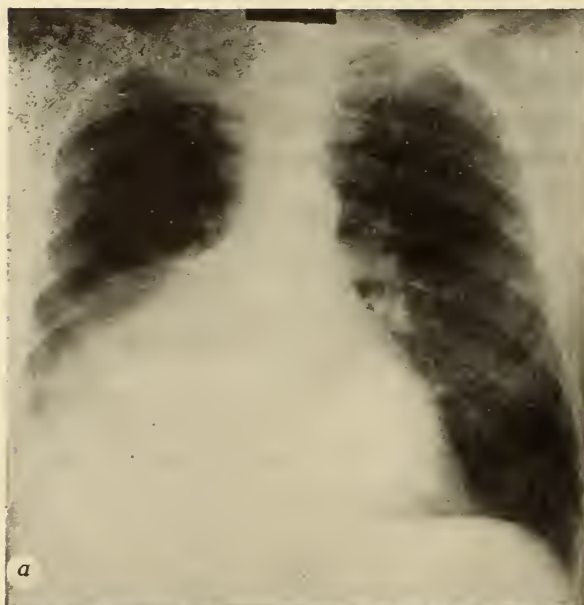


Fig. 1a. Lesion in base of right lung which was thought to be pneumonia of the right lower lobe. b. Six days after a. The extent of the lesion is less, corresponding to improvement noted clinically. c. Four weeks after b. The lesion is still present and has changed very little. A carcinoma of the right lower lobe bronchus was found at the time of bronchoscopic examination.

and that leukocytes numbered 15,400 per cubic millimeter of blood. By the twenty-third day of his stay in the hospital his temperature was normal and remained so until his dismissal on the thirty-third day. No roentgenogram was made at this time. The day after his return to his home, his temperature rose to 103° F. and he was readmitted to the hospital. Empyema was suspected and thoracotomy was performed but

nothing was seen to account for the fever. The day after operation his temperature reached 104° F. and treatment with penicillin was begun. His temperature rapidly returned to normal and he improved subjectively. He was dismissed after five weeks feeling well except for occasional hemoptysis. During the course of his illness he had lost 22 pounds (10.0 kg.) but had regained 8 pounds (3.6 kg.) by the time of his dismissal from the hospital.



Fig. 2. Roentgenogram made at the time patient was first seen at the Mayo Clinic but fourteen weeks after the onset of his illness. The shadow seen in the base of the right lung is due to obstruction of the right lower lobe bronchus by a polypoid squamous cell epithelioma, grade 3 (Broders' method).

Because the roentgenogram of his thorax continued to show a lesion the patient was referred to the Mayo Clinic on August 7, 1944. On physical examination absence of breath sounds and of vocal and tactile fremitus was noted in the lower right portion of the thorax. The percussion note was flat. A roentgenogram (fig. 2) revealed a shadow in the right lung which was thought to be due to an obstruction of the right lower lobe bronchus. The possibility of carcinoma was suggested. Bronchoscopy the following day revealed a large polypoid tumor in the right lower lobe bronchus. Tissue removed from the tumor was reported by the pathologist to be squamous cell epithelioma, grade 3 (Broders' method). Right pneumonectomy was performed one week later.

This case illustrates well the necessity of a follow-up roentgenographic study. Had a roentgenogram been made after the patient's temperature became normal during his first admission to a hospital it would have been recognized that the lesion was not uncomplicated pneumonia and an investigation into the nature of the lesion would have been begun rather than allowing the patient to return home. The case further illustrates the clinical improvement which follows the administration of penicillin when there is inflammatory change in the lung secondary to an obstructing carcinoma of a bronchus.

Case 3.—A man, sixty-nine years of age, was first seen at the clinic September 10, 1945, because of symptoms of obstruction to the lower part of the urinary tract. Benign hypertrophy of the prostate was found and transurethral prostatic resection was performed. At that time a roentgenogram of the thorax did not show any abnormality.

The patient returned October 25, 1946, a little more than a year later, with recurrent symptoms referable to the urinary tract. He was found to have a temperature of 100.4° F. He stated that, three days before, he had suffered from a chill and begun to cough and experience precordial pain. There had been no hemoptysis. Physical examination disclosed that the patient was dyspneic and that he weighed 5 pounds (2.3 kg.) less than he had the year before. The pulse rate was 132. No other abnormal findings were noted. A roentgenogram of the thorax (fig. 3a) showed a lesion in the region of the left hilus extending into the left lung. Significant laboratory findings were: hemoglobin, 13.5 gm. per 100 c.c. of blood; leukocytes, 10,600 per cubic millimeter of blood; sedimentation rate, 85 mm. in one hour (Westergren); sputum containing many forms of streptococcus.

Because of the acute onset of the illness and the fever, it was thought that the process in the lung was pneumonia and the patient was sent to a hospital. Treatment with penicillin was begun and continued for ten days. At the end of this period, because the fever did not subside, a diagnosis of bronchogenic carcinoma was considered.

Figure 3b shows a roentgenogram of the thorax made about this time. Bronchoscopy was performed. The bronchial mucosa was red, no tumor was seen and cells from the bronchial secretions obtained through the bronchoscope did not show evidence of malignancy.

The patient was kept in the hospital under observation for two more weeks and roentgenograms of the thorax (fig. 3c) made during this period showed the shadow to persist, although it varied in extent from time to time.

After about three weeks in the hospital the patient was dismissed without a diagnosis having been established. It was recommended that he return in two weeks for observation. When he returned his temperature was 102° F. and a roentgenogram of the thorax showed the lesion in the left lung to persist (fig. 3d). At this time it was felt that the lesion must be malignant and bronchoscopy was performed again. It was noted that the bronchial tree was distorted and the examiner was unable to see the bronchus to the left upper lobe. He suggested that this might be due to an obstruction of this bronchus with atelectasis of the left upper lobe. Again no malignant cells were found in the bronchial secretions obtained through the bronchoscope.

Because the lesion had not responded to treatment and had not disappeared after an interval sufficient for the regression of ordinary pneumonia and in spite of the fact that a diagnosis of carcinoma had not been established, exploratory thoracotomy was advised. At operation, a squamous cell epithelioma, grade 4, was found, which involved the left upper lobe bronchus, causing obstruction with contraction of the lobe. Pneumonectomy was carried out.

This case illustrates the fact that lesions which do not respond to treatment and which do not show improvement in roentgenologic appearance frequently require exploration, even though a positive diagnosis cannot be established as a basis on which to advise operation.

Case 4.—A man, sixty-one years of age, suddenly, on September 9, 1945, suffered from a chill and high fever. That afternoon had been hot; he had worked hard, perspired freely and refreshed himself by a swim in cold water. He suffered from pain in the right side of the thorax which was aggravated by coughing or deep breathing. His physician made a roentgenogram of the thorax, which was reported to show pleuritis, and began treatment with one of the sulfonamides. At the end of a week the patient felt much better and could cough without pain. No follow-up roentgenogram was obtained. For five weeks thereafter he was comfortable. At the end of this time the pain recurred and became progressively more severe.

The patient registered at the clinic December 6, 1945, at which time physical examination revealed coarse moist rales in the base of the right lung, increased resonance and tactile fremitus in this same region, temperature 98.9° F. and a pulse rate of 104. The patient was dyspneic and

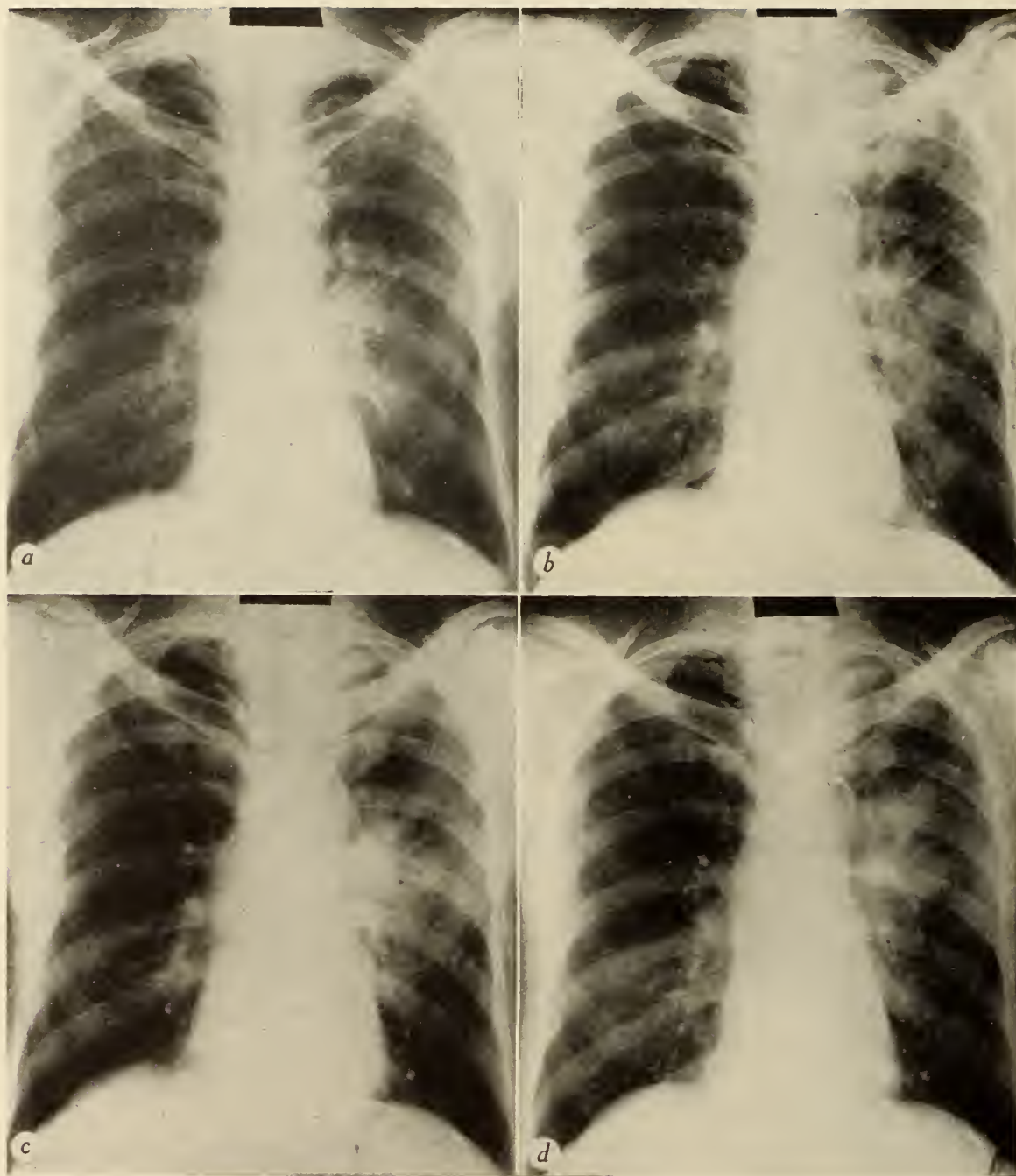


Fig. 3a. Roentgenogram made on the day after the patient was first seen, four days after the onset of his illness. b. Eleven days after a. There is more involvement of the left lung at this time. c. Ten days after b. The lesion is still present. d. Eighteen days after c, at the time of the patient's second admission to the hospital. At exploration a squamous cell epithelioma, grade 4, was found. It involved the left upper lobe bronchus.

had lost about 40 pounds (18.1 kg.). Significant laboratory findings were: hemoglobin, 10.8 gm.

per 100 c.c. of blood; leukocytes, 22,000 per cubic millimeter of blood; sedimentation rate, 111 mm. in one hour (Westergren). A roentgenogram of the thorax (fig. 4) showed a lesion in the right lung. Bronchoscopy was performed and some blood was seen coming from the right lower lobe bronchus. Tissue was taken, which the pathologist reported to show no evidence of malignancy.

It was thought that the patient was suffering from a carcinoma of the lung and exploratory thoracotomy was carried out. At operation, the surgeon found a chronic pulmonary abscess which involved chiefly the right middle lobe. He re-

moved this lobe together with small portions of both the right upper and lower lobes, which were densely adherent. Examination of the resected portion of the lung by the pathologist revealed only purulent inflammatory tissues with abscess formation.

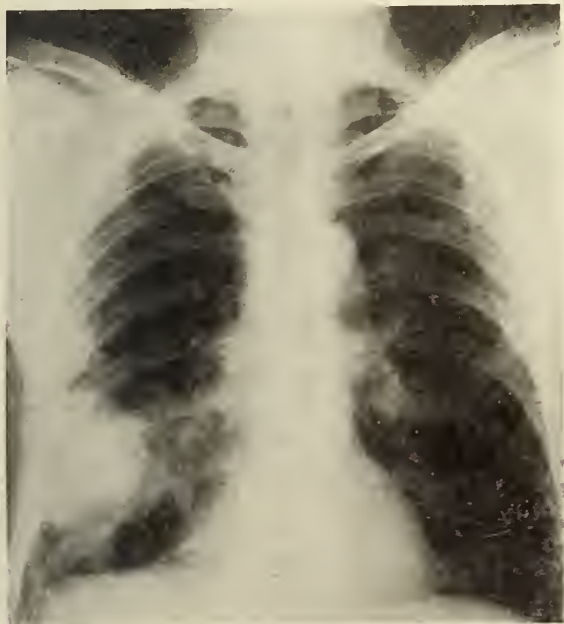


Fig. 4. Roentgenogram made at the time patient was first seen at the Mayo Clinic but three months after the onset of his illness. The lesion seen in the right lung proved to be a chronic pulmonary abscess of the right middle lobe.

This case not only illustrates a complication of pneumonia which simulates carcinoma but also shows the necessity of the follow-up roentgenologic examination. Had a roentgenogram been made when the patient had apparently recovered, the complication might have been recognized and adequate therapeutic measures instituted which might have prevented the necessity for the subsequent operation.

COMMENT

It has long been recognized that follow-up roentgenograms are necessary in watching the course of pulmonary tuberculosis. Progression or regression of the disease cannot be ascertained from a single roentgenographic examination. To state definitely that a tuberculous lesion is active almost always requires serial examinations or the demonstration of a cavity.

It is also recognized that periodic roentgenographic examinations are necessary when dealing with a patient who has a soli-

tary, well-circumscribed tumor in a lung. In such cases, exploration is advisable when on succeeding roentgenograms the tumor shows signs of growth.

It remains for physicians to be aware also of the necessity for follow-up roentgenograms when treating a patient whose clinical course is that usually associated with pneumonia. Any lesion which obstructs a bronchus, whether it be a carcinoma, a foreign body, a pulmonary cyst, a broncholith or an inflammatory structure, may cause symptoms which simulate those encountered at the onset of pneumonia; so may the inflammatory processes which accompany bronchiectasis or pulmonary abscess. Improvement may be noted both in the condition of the patient and in the roentgenologic appearance of the lung following treatment with one of the antibacterial drugs. Nevertheless, the underlying lesion will still be present and the roentgenographic appearance of the lung will not be normal. Only when the roentgenographic appearance of the lung has returned to normal can the physician forget the possibility that his patient may be suffering from one of the complications of pneumonia, or from some other possibly more serious lesion.

Malaria—In many instances, self-treatment with inadequate amounts of atabrine or quinine for one to three days has resulted in an individual attack being continued over several weeks. One patient complained he had suffered 45 attacks which careful analysis reduced to 14. Such a history may frequently reveal a surprisingly regular periodicity of relapse which may be very useful in anticipating further attacks.

It is important that these cases receive an adequate amount of therapy for each episode, as approximately 50 per cent are terminated. Frequent blood examinations for the slightest symptoms, especially during the expected period, will allow treatment to be initiated before symptoms become severe. Where the attacks are frequent and at short intervals it may be well to try a combination of quinine and plasmochin for 10 to 14 days. If available, a further new drug—pentaquine—has been shown to be most effective in the cure of relapsing vivax infections. It must be administered every four to six hours day and night for 14 days together with 0.3 gm. of quinine. Since this tedious treatment will only be practical in a limited number of cases, preferably hospitalized patients, it seems these individuals would best be served by early prompt anticipatory blood examinations and treatment with chloroquine or a continuous and indefinite suppression with chloroquine or paludrine by unit doses once weekly.—Walker, *New Orleans M. & S. J.*, Sept. '47.

CLINICAL APPLICATION OF THE SEX HORMONES IN
GYNECOLOGY

HERBERT H. THOMAS, M. D.

Birmingham, Alabama

At the present time we may be at the threshold of great discoveries in endocrinology. Especially interesting are the rapid advances made in the chemical preparation and clinical application of the various sex hormones. Only a few years ago the commercial preparations available were unreliable in action and very expensive. At the present time most commercial preparations are standardized and of a known potency. At the same time the cost is being steadily reduced.

Unphysiologic sex hormonal medication may have a serious outcome for the patient. It is for this reason that a warning is sounded. Correct diagnosis and careful evaluation of an endocrine case are necessary before any hormonal medication is administered. It is also necessary for the physician to know something of the pharmacologic characteristics of these hormones to prescribe them intelligently.

The sex hormones are steroids and are closely related to each other by having in common the phenanthrene-cyclopentane nucleus. This nucleus relates the sex hormones to cholesterol which may be the chemical substance from which the sex hormones are made in the body. The steroids are all stable chemical substances that retain their potency indefinitely. Commercial preparations do not require refrigeration. The steroids, being nonprotein, do not cause any allergic phenomena.¹

There are three groups of sex hormones: estrogens, androgens and progestational steroids. The adrenal cortical hormones are very closely related steroids but will not be discussed in this paper. Estrogens are necessary for sexual maturation and continued function of the sexual system. Less well known but equally important are the effects that the estrogens have on the body's metabolism. Progesterone is utilized by the body in the preparation for and the continu-

ation of pregnancy. Androgens are found in female urine in the same amounts as in male urine. They are to some extent metabolic products of adrenal cortical steroids. Androgens have no specific functions as yet described for them in the female.¹

The most active estrogen found in the body is estradiol. This is probably the estrogen elaborated by the ovary. Other estrogens found in the body are estrone and estriol. They are thought to be catabolic products of estradiol and are less active.²

Besides the estrogens elaborated by the body or products synthesized from them, there are substances that have marked estrogenic activity which differ from the hormonal estrogens in their chemical composition. Such compounds are diethylstilbestrol, hexestrol and benzeestrol. These compounds are inexpensive and potent but cause a higher percentage of toxic reactions.

Progesterone is the active principle of the corpus luteum but is only effective when given parenterally. Oral progestational therapy may be given by the use of pregnenolone which is anhydro-hydroxyprogesterone, a stable synthetic product. To be as effective as intramuscular progesterone therapy, five times as much oral medication must be given.

Testosterone propionate is the androgen that is most effective for intramuscular injection. Methyl testosterone is the choice for oral administration.

There are several conditions in which the clinical use of sex hormones may be beneficial. Experience has demonstrated these hormones to be of greatest value; first, in controlling the disagreeable symptoms of the climacteric; second, in managing functional bleeding; and third, in checking threatened or habitual abortion.

CLIMACTERIC

It is in the climacteric that hormonal therapy gives the best results. The term climacteric denotes the period of ovarian recession with its attendant pituitary gland

Read before the Association in annual session, Birmingham, April 14, 1947. From the Department of Gynecology, Medical College of Alabama.

1. Hamblen, E. C.: *Endocrinology of Woman*. Charles C. Thomas, Springfield, Illinois, 1945.

2. Grollman, A.: *Essentials of Endocrinology*, ed. 2. J. B. Lippincott, Philadelphia, 1947.

overactivity in contradistinction to the menopause which merely indicates when menstruation has ceased. These altered functions of the endocrine glands frequently produce undesirable symptomatology.

However, of the patients passing through this period of life only fifteen per cent have symptoms that require treatment. In only a small number is estrogen therapy necessary. This should be given orally. This route is not only most convenient but also permits medication to be so administered as to insure a uniform rate of absorption. The intermittent hypodermic injection of estrogen results in an uneven absorption rate and is very poor treatment psychologically.

There are many commercial preparations of an estrogenic nature suitable for use but only three will be discussed. In the climacteric the daily dose adequate to control symptoms for estrone sulfate is 0.3-0.625 mg.,³ estinyl estradiol, 0.5-0.1 mg.⁴ and diethylstilbestrol, 0.1-0.2 mg. If the menopause has occurred, the medicine should be given daily for twenty days and rest ten days before starting again.³ Three or four cycles may be given and the medicine stopped. When symptoms recur, several series may again be repeated. If the patient is still menstruating, the medicine may be given for twenty days, beginning on the fifth day of each cycle and repeated for three or four cycles.

During this period of life there are many problems that arise to cause mental and physical stress. These may result in a protective mechanism of vague aches and pains only too often ascribed solely to the menopause. Estrogenic therapy is for the symptoms resulting from the climacteric. It will not solve all the problems of the middle aged.

Hot flushes are the best indication for estrogenic therapy. The continued periodic injection of estrogens over many months or years is to be deplored. Such therapy serves to keep the climacteric patient in a state of constant endocrine flux and postpones the final endocrine adjustment.

FUNCTIONAL UTERINE BLEEDING

Bleeding of a functional nature may be controlled by estrogens. Adequate doses of oral or parenteral estrogen will stop bleeding in two to five days and will maintain hemostasis until the estrogen level drops. On stopping estrogen therapy bleeding will begin in one to five days. This bleeding will be from a proliferative type of endometrium which will not slough. If adequate amounts of a progestational steroid are added to an endometrium already primed with estrogen, a secretory type of endometrium will result. On stopping this therapy bleeding again occurs and the endometrium will slough to the basalis layer thus leaving a clean endometrial bed.

To get the best result this therapy should be given cyclically and in sequence.⁵ According to Hamblen the estrogen should be started on the fifth day of the menstrual cycle and continued for twenty days. This may be given in the form of estrone sulfate (Premarin), 3.75 mg. daily,³ ethinyl estradiol (Estinyl), 0.15-0.3 mg. daily,⁶ or diethylstilbestrol, 3-6 mg. daily.¹ This daily dosage is best given divided into three parts to aid further in a more uniform absorption and lessen the chances of toxicity. The progestational steroid should be given from the fifteenth to the twenty-fifth day of the cycle and stopped the same time as the estrogen.⁵ Pregneninolone (Pranone, Schering; Lutocyclol, Ciba; Progestoral, Roch-Organon) may be taken orally in 10 mg. doses three times daily to give the progestational or secretory change to the endometrium. Estrogenic and progestational therapy should be continued for three or four cycles.

Another method of controlling functional bleeding is to give large daily doses of estrogen and progesterone intramuscularly for five days. Ten thousand (10,000) i. u. estrogen and 20 mg. progesterone are injected daily for five days and repeated every twenty eight days for three or four times. This probably gives equally good results in comparison with the method first described but it entails the use of hypodermic medication.

3. Hamblen, E. C.: North Carolina M. J. 7:533, 1946.

4. Harding, F. E.: Am. J. Obst. & Gynec. 48: 181, 1944.

5. Hamblen, E. C.: Nebraska M. J. 31: 497, 1946.

6. Bickers, W.: Am. J. Obst. & Gynec. 51:100, 1946.

All abnormal bleeding should not be considered functional in character and treated indiscriminately with hormones. Before any endocrine therapy is used a diagnosis of functional uterine bleeding must be made. Bleeding of a functional nature usually takes place from a proliferative type of endometrium. This can be ascertained by taking an endometrial biopsy or doing a curettage just before or during the first twelve hours of the menstrual period. All women over thirty five years of age who have abnormal uterine bleeding should have a curettage to eliminate the possibility of a malignancy.

Androgens, in the form of testosterone propionate, given intramuscularly in 25 mg. doses for three or four times, may be used very effectively to stop functional uterine bleeding.⁷ However this only stops the bleeding by causing atrophy of the endometrium and does not correct the abnormal physiology. It is much more expensive than estrogen and is likely to cause virilizing symptoms if given in large doses or over a long period of time.⁵

While the use of pituitary gland substance, pregnant mare serum or chorionic hormones may check functional uterine bleeding, still these products fail much more frequently than a combined use of estrogen and progesterone. In addition, some are protein in composition and by their use may give dangerous allergic reactions.

THREATENED AND HABITUAL ABORTION

There is much confusion in the treatment of threatened or habitual abortion by endocrines. The corpus luteum of pregnancy is thought to manufacture the estrogen and progesterone necessary for the continuation of pregnancy until the placenta can take this function over during the third and fourth month. It is during these first four months that trouble with abortion will occur. At the present time a consistently reliable hormonal therapy schedule is not available. Some investigators think progesterone will aid in quieting the contractions of the aborting uterus.⁸ Others think

estrogen is needed to aid progesterone.⁹ In threatened abortion, besides using the time honored measures of treatment of bed rest and sedatives, on an empiric basis 10,000 i. u. estrogen and 10 mg. progesterone may be given intramuscularly one to three times daily. This should be continued until all signs of abortion are over. When the danger period has apparently passed, the dosage schedules may then be reduced to one injection of estrogen and progesterone every two or three days. This should be continued until after the fourth month of pregnancy when the placental output of hormones becomes adequate to maintain the pregnancy.

An alternate method of management when the acute symptoms have subsided is to administer by mouth estrone sulphate, 3.75 mg., and pregnenolone, 30 mg., each day until after the fourth month.

When a patient who has a history of habitual abortion is pregnant, she should be put on estrone sulphate, 3.75 mg., and pregnenolone, 30 mg., by mouth daily. This should be continued until after the fourth month. If abortion is threatened, the patient should be treated as described above.

SUMMARY

A brief re'sume' of the pharmacologic characteristics of estrogens, androgens, and the progestational steroids is made. Their value in the treatment of the disagreeable symptoms of the climacteric, the control and the regulation of functional uterine bleeding, and empiric use in threatened and habitual abortion are discussed. Especial emphasis is placed on the use of oral hormonal medication when feasible.

9. Vaux, N. W., and Rakoff, A. E.: *Am. J. Obst. & Gynec.* 50: 353, 1945.

Abdominal Pain in Children—An abdomen found to be soft and with no localized spots of tenderness would probably rule out all acute abdominal conditions except a beginning intussusception which very often starts in this way. However, beware of the abdomen which shows an area of localized tenderness, even though no spasm or rigidity may be present: a retrocecal appendix may be getting ready to blow up an abdomen and still show no more than a small area of tenderness on deep palpation. A tense, distended abdomen might mean a peritonitis or intestinal obstruction. A tense, board-like abdomen, particularly following trauma and accompanied by symptoms of varying degrees of shock, probably indicates a ruptured viscus, with or without hemorrhage.—Cain, *J. South Carolina M. A., Aug. '47.*

7. Geist, S. H., and Salmon, U. J.: *J.A.M.A.* 117: 2207, 1941.

8. Rutherford, R. N.: *Am. J. Obst & Gynec.* 51: 652, 1946.

EXPERIENCES WITH BRUSH'S METHOD FOR THE INITIAL STABILIZATION OF DIABETIC CHILDREN

BENJAMIN P. CLARK, M. D.

Gadsden, Alabama

That diabetes in children and in adults represents two different diseases is becoming well recognized.¹ It is also becoming generally known that there is a uniform response of children with diabetes mellitus to the treatment of their initial episode of glycosuria. In 1940, Jackson, Boyd and Smith² were able to demonstrate this marked uniformity, although their series of cases included many children previously treated. It remained for Brush³ to point out that this uniformity of response could be expected to a maximum degree only in patients undergoing their initial episode of glycosuria.

The rationale of this phenomenon probably goes back to the work of Allen,⁴ who, in 1922, noted an improvement in children treated with adequate doses of insulin; and felt that the beneficial effect could easily be explained in terms of substitution of the hypodermic injection of insulin for the productive effort of the exhausted islet system of the pancreas. The islet system then, being relieved from the driving stimulus of the child's hyperglycemia, may recover a portion of its normal functional capacity.

With this working hypothesis, Brush developed, over a ten-year period, a method for the uniform standardized treatment of the initial episode of hyperglycemia. The entire need of the child for insulin is supplied, initially, by the exogenous route until signs of the recovery of the islet system are noted. He has supplied complete tables for the calculation of the daily dose of insulin, the number of calories in the diet, and the amount of carbohydrates, fats and protein in the diet. In the use of this method the tables should be followed strictly. The initial dose of insulin is high and is divided into four daily doses, one to be given fifteen minutes

before each meal and a smaller one at four in the morning. The chief sign of the beginning recovery of the islet system is the development of insulin shock. This can usually be expected between the sixth and the tenth day of treatment, generally occurs during the daylight hours, and is easily controlled by the administration of a small amount of sweetened orange juice. As soon as shock is noted, the dosage of insulin is reduced daily according to the schedule as given by Brush until the minimum level which does not produce glycosuria is reached. This will usually be found to be between three and nine units per day. In this method, then, there is but one variable, the exogenous insulin; the diet and exercise are constant factors.

Since the publication of Brush's work, ten children have been admitted to Milwaukee Children's Hospital for the initial stabilization of their diabetes. Four of these cases have been stabilized according to the method advocated by Brush. One did not respond in a typical manner; another was discharged before he was completely regulated but appeared to be responding as expected.

The two patients who followed the usual pattern of Brush's cases were hospitalized for 36 and 37 days and were discharged on eight and five units of regular insulin. In each case shock appeared on the 14th day of treatment, which is somewhat later than experienced by Brush. Their weight gains during the hospital stay were 3¾ pounds and 7½ pounds. Neither of these cases nor the two other cases treated by this method have been readmitted.

Of the six cases treated by other methods during the period covered, the average stay was 33 days, the average number of units of insulin needed for continued control was 19, and the average weight gain during hospitalization was 2.3 lbs. Two of these cases were spilling sugar in significant amounts at the time of discharge. One of these has had two subsequent admissions for regula-

From Milwaukee Children's Hospital.

1. Newburgh: Round Table Discussion on Diabetes; *J. Pediat.* 20: 782, 1942.

2. Jackson, Boyd, and Smith: *Am. J. Dis. Child.* 59: 332, 1940.

3. Brush, J. M.: *Am. J. Dis. Child.* 67: 429, 1944.

4. Allen, F. M.: *J. Metab. Research* 1: 5, 1922.

tion of his diabetes and another has had five.

Brush's method, therefore, seems to have several advantages over other methods for the initial stabilization of the diabetic child. It holds the patient under close observation until he has reached a steady state. Such a state will not be maintained indefinitely, being lost eventually through an intercurrent infection or a bout of dietary indiscretion.

This method confines the patient to the hospital for a minimal length of time for stabilization. This would not seem evident from the figures given above, but it is believed that it would have been necessary to hold the other cases in the hospital for a much longer period of time to permit their discharge in the same state of regulation as was reached in the patients treated by Brush's method.

This method further permits the child to be stabilized on an insulin dose representing the lowest level compatible with efficient metabolic economy. With the improved level of control possible with this method one may predict a lessening of complications, sequelae and fatalities.

The plan of treatment is workable, easily managed, and, while it does require a strict regimen, it is one that is easily followed and one which can be placed within the facilities of physicians anywhere. Close check with frequent blood sugar determinations is unnecessary. Elevated renal thresholds for sugar are very uncommon in early diabetes in children and, further, the blood sugar level in children is subject to rapid and frequent fluctuations. Thus, frequent urinalysis is usually a sufficient guide to response to therapy. An occasional spill of heavy sugar in the urine preceded and followed by negative tests can be ignored.

The method has a few noteworthy disadvantages. None of these should deter one from its use. The four daily doses of insulin, the first coming at four a. m., is not pleasant. However, one is not justified in an attempt to alter the regimen in this respect; to do so will prolong the period before recovery starts and may interrupt the process if it has started.

The diets given by Brush are somewhat low in caloric value for children who are already somewhat undernourished, as most

initial childhood diabetics are. It is to be expected that these children will be hungry during the period of hypoglycemia but this hunger should not be used as a reason for increasing the diet. The initial diet should not be altered during the stabilization process. One may use the desired optimum weight of the patient, rather than his actual weight, as a basis for the computation of the diet, but, if one does so, he must be prepared for a longer period before the appearance of shock.

These children require rather close watching during the days before the appearance of the shock and for a few days thereafter. Using Brush's diets, shock may be expected from the sixth to the tenth day, rarely earlier, occasionally later. Shock may appear between eleven a. m. and noon or around four p. m. It is not known to occur at night. It may recur on the following day but will not thereafter. It is important to keep these children in the hospital until they can be discharged on the final regulating dose. They are kept at strict bed rest until the shock episode occurs but may be permitted up thereafter. There is a strong temptation to increase the diet during the regulating period as these children complain bitterly of hunger. However, to do so defeats the purpose of the treatment by creating a relative hyperglycemia which then stimulates the islet system to overactivity before it has sufficiently recovered from its fatigue.

SUMMARY

Some experiences with the use of Brush's method for the initial stabilization of the diabetic child have been presented. This method permits the islet system of the child to recover from its overstimulation by constant hyperglycemia and to take over early the production of the major amount of the insulin needed for metabolism so that only small amounts of exogenous insulin are required. The method is easily followed and requires a minimum of laboratory control. If used it should be followed strictly if best results are to be expected.

NORTHEASTERN DIVISION MEETING

Vice-President W. Frank Jordan announces a meeting of the Division in Anniston on October 30th, preceded by a luncheon at 12:30 P. M. Those planning to attend should advise Dr. Jordan.

Control of Rabies—The Committee on Public Health Relations of the New York Academy of Medicine presents in a recent issue of Public Health Reports a comprehensive analysis of the problem of rabies control. The analysis is based on information gathered from the replies to questionnaires distributed to state health departments, the provincial health authorities of Canada, the Bureau of Animal Industry of the United States Department of Agriculture, the United States Public Health Service, the Veterinary Division of the Office of the Surgeon General of the United States Army, the United States Livestock Sanitary Association, the American Veterinary Medical Association, the National Research Council and the various research projects sponsored by the Rockefeller Foundation. Statistics collected by the Bureau of Animal Industry since 1938 show that the incidence of rabies in men and animals increased in 1943, after a downward trend from 1939 to 1942, and reached a peak in 1944. The 1944 report of the Committee on Rabies of the United States Livestock Sanitary Association emphasizes the seriousness of the situation.

An intensive investigation of rabies was carried on from November 1936 to December 1945 by the International Health Division of the Rockefeller Foundation in cooperation with the Alabama State Board of Health. During the nine year investigation, field and laboratory studies of the disease and of the existing methods of control were under the direction of Dr. Harald N. Johnson. The Alabama studies showed that a single injection of 5 cc. of a potent vaccine will produce a high degree of immunity that is satisfactory for one year. The Rabies Research Laboratory at Montgomery has now been taken over by the United States Public Health Service, which is continuing the studies inaugurated by Dr. Johnson on the efficacy of new canine rabies vaccines. Until recently the protection afforded by vaccination in rabies was uncertain. Prophylactic vaccination of animals is now a practical possibility. With the development of the Habel test for potency, based on earlier work by Webster, and with new methods of producing better vaccines a high level of effectiveness can be attained.

Webster and Dawson in 1935 developed a mouse inoculation test for diagnosis which is more sensitive than any biologic test previously used and more accurate than microscopic examination. Studies of the virus, its distribution in the tissue of victims of rabies and its characteristics under varying conditions have revealed information that has contributed materially to the production of more effective vaccines and to more accurate knowledge of manifestations of the disease. Levinson and his associates at the Michael Reese Research Foundation, Chicago, produced in 1944 a potent inactivated virus vaccine with ultraviolet radiation from a new type of lamp which is a source of both total and extreme ultraviolet. Habel suggested recently that the use of serum or serum in combination with vaccine may bring about effective prophylaxis against rabies

in man. Injection of serum might be given immediately to a person bitten by an animal suspected of having rabies. Administration of vaccine might then be deferred until the mouse test for diagnosis could be completed, which can be done in six days. If the diagnosis is positive, there is still time for effective treatment; if it is negative, the person has been spared the rather arduous Pasteur treatment.

The committee recommends that efforts should be made to secure uniform national control measures against rabies; that rabies in any animal or human being should be made reportable in all state and local units of health jurisdiction, the figures to be published in Public Health Reports; that every state should require annual licensing of dogs, and in urban areas the granting of a dog license should be made contingent on vaccination. The National Research Council on Nov. 26, 1945 reported that a single injection of 5 cc. of an approved vaccine is effective for use in mass vaccination programs and that three injections of 5 cc. each, administered a week apart, provide greater immunity and should be advised when practical. The United States Public Health Service or the Bureau of Animal Industry, or both jointly, should be urged to formulate standard quarantine procedures covering the various situations that arise during an outbreak of rabies and to recommend these to the states and territories for adoption. An educational program should be launched by appropriate health authorities to explain the necessity for control measures and to emphasize the efficacy of the vaccines now approved by the Bureau of Animal Industry and the National Institute of Health.—*Editorial, J. A. M. A., Sept. 20, '47.*

Chemical Factors in Asthma—The theory that treatment with potassium improves patients with allergic disorders has not been generally accepted, and such therapy does not seem to be of great value. When disturbances of water balance occur, they should certainly be corrected. A study of the total balances,—that is, the total intake as compared to the total output, of sodium, potassium and water in the body,—together with the use of radioactive materials, may reveal more accurately than simple blood levels any shift of these substances in the cells and tissues of the body that may occur in allergy.

Therapy with calcium or magnesium is not specific for allergic conditions and is not indicated unless an actual deficiency of these substances in allergic patients is proved. So far as blood sugar is concerned, it would be interesting to know if it is at a low level at the onset of nocturnal attacks of asthma; if this can be shown, carbohydrate feedings before retiring at night may benefit some patients. Insulin shock seems to be justified only when psychiatric factors are dominant in aggravating the symptoms.—*Wiswell and Rackemann, New England J. Med., Sept. 11, 1947.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham

C. E. ABBOTT Tuscaloosa

JOHN L. BRANCH Montgomery

D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

October 1947

JAUNDICE FOLLOWING THE USE OF POOLED PLASMA

The Committee on Blood and Blood Derivatives of the Advisory Board on Health Services of the American National Red Cross believes that the possibility of disease transmission by the injection of human blood and certain of its derivatives should be re-emphasized to state and territorial departments of health and through them to practicing physicians within their jurisdiction. Although many diseases theoretically might be so transmitted, homologous serum hepatitis or jaundice following the administration of pooled plasma has proven to be the greatest practical problem; first, because of the difficulty or impossibility of detecting infective donors; second, because of the practice of pooling 10-50 bloods to reduce the isohemagglutinin titer; and third, because of the availability of dried plasma as a result of the distribution of surplus blood derivatives by the American Red Cross.

Prepared by the Committee on Blood and Blood Derivatives of the Advisory Board on Health Services of the American National Red Cross. The committee consists of Dr. Charles A. Janeway, chairman, Dr. Elmer L. DeGowin, Dr. Charles A. Doan, Dr. Isidor S. Ravdin, Dr. Robert F. Loeb, and Dr. Edwin J. Cohn.

This report distributed by the American National Red Cross, August 15, 1947.

In the instructions for the use of normal human dried blood plasma, prepared under the direction of this committee and sent out to departments of health at the time of the initial distribution of the surplus plasma received by the American Red Cross from the Army and the Navy, attention was called to the possibility of virus transmission under the section headed adverse reactions from the administration of human plasma. It was emphasized that jaundice might develop from one to 4 months after administration, if a particular lot were contaminated with the virus of homologous serum jaundice.

The committee has reconsidered the advisability of distributing this plasma on several occasions, but has always felt that, in view of the lack of availability of whole blood or other relatively safe blood derivatives in many parts of the country, plasma would save many more lives than would be lost from the occasional severe case of hepatitis which might result from its use. At the same time, steps were taken to determine as accurately as possible the real risk to the patient from the use of the surplus plasma being distributed by the American Red Cross. Studies were initiated in several states. One of these carried out by the New York State Department of Health has now progressed to the point where sufficient figures are available for tentative conclusions. In 649 patients followed for 6 months after transfusions of this plasma, 29 cases of hepatitis have been observed, while there have been no suggestive symptoms of hepatitis in 1,597 household contacts of these 649 patients, thus suggesting that the disease actually was homologous serum jaundice and not epidemic infectious hepatitis. This figure of 4.5 per cent thus represents the probable maximum incidence of the disease in recipients of random lots. It is lower than the 7.3 per cent incidence reported in approximately 1,000 patients receiving pooled serum prepared by the Northwest London Blood Supply Depot in Great Britain, but the size of their pools was somewhat larger.

There is every reason to believe that whole blood, fresh or frozen plasma prepared by hospital blood banks, or commercial plasma, as well as convalescent serum, may all transmit the same agent, but the factor of pooling greatly increases the prob-

ability factor with plasma. On the other hand, there is good evidence that the two most widely used products of plasma fractionation are free from this risk. In the case of immune serum globulin (normal human serum gamma globulin) distributed by the American Red Cross for the prophylaxis of measles, follow-up studies have been made on approximately 1,900 patients. Only one case of jaundice occurred within 6 months of injection and, in that case, 74 other children received the same lot without developing any evidence of hepatitis. In the case of normal human serum albumin (salt-poor) a heat treatment used in its routine preparation has been shown to inactivate a strain of homologous serum hepatitis virus. Various promising studies on methods for inactivation of this virus in plasma are under way, but nothing has been perfected thus far. Finally there is evidence that the disease may be transmitted from patient to patient in hospitals by the use of improperly sterilized or unsterilized syringes and needles.

This committee still does not feel that plasma should be withdrawn from distribution. However, it does believe that all practicing physicians should be reminded of the potential risk to the patient in the administration of pooled plasma and urged to restrict its use to those instances, chiefly serious emergencies, when its use is clearly indicated and when safer agents such as whole blood or serum albumin are not available. Moreover, physicians who see patients with hepatitis should make a habit of inquiring about their injections with blood or its derivatives during the preceding 6 months and of reporting such cases to the state or territorial department of health.

Patients who have been hospitalized within 6 months and particularly those who have received injections of human blood, plasma, or serum during the period should not serve as blood donors even though they may feel perfectly well. Furthermore, potential blood donors should be rejected if a history of jaundice among members of their household within a period of the past 6 months is obtained.

GOOD POSTURE

Good posture is one of the most attractive elements in the personality. There is

something about the person who walks with a good carriage, with head erect, and a firm step, and an air of control that commands respect.

Posture should not be thought of in terms merely of standing and sitting. Rather it should be considered as the carriage of the entire body, both at rest and in motion, lying down, sitting, standing, walking, and the changes from one to another, which call for coordination of movement of the parts of the body, according to a Health Talk issued by the Educational Committee of the Illinois State Medical Society.

Because, in waking hours, more time is usually spent sitting than walking or lying down, correct posture in the sitting position cannot be emphasized too strongly. In this position, the spine is directly affected. The body should not be accommodated to the chair, but rather the chair should be accommodated to the body. No one, for example, should sit for long hours in a chair that permits the body to slump or sag. With the constant relaxation of muscles and ligaments, the tendency is toward a permanent sagging. Dropped shoulders result. So do protruding abdomens. Coordination depends on muscular development as well as alertness, proper nervous relationships and speed of reaction.

The person who walks with the chin and head dropped low suggested the remark "Here's my head and the rest of me is coming." The appearance is awkward, ungainly and unhealthy.

For the school child, physical training gives important stimulation to the body as it applies to maintaining flexibility of movement in walking, standing or sitting. For the housewife, special efforts should be made to have household equipment, whether washtub, bassinet, ironing board, kitchen sink, mop, or bridge table, at a height designed to keep the body erect.

The posture of the adult reflects the training in good habits as a child. During the years of growth, the body shapes itself to the habits indulged in to promote comfort and relaxation. If these are bad, adult posture is bad.

Special attention should be paid to the back and abdomen. Keeping the abdomen in and flat provides a smooth silhouette. With the shoulders back and the spine

straight, the weight is more evenly distributed on the feet and the resulting picture is good, comfortable and healthful.

The balanced body can then walk smoothly. Rhythm of muscles and coordination of movement lessen fatigue. With the strain on the body released, more energy is left for other things. With good posture, accidents, such as the physical kind occurring in the home, stepping off curbs and street cars, are reduced.

"As the twig is bent, so the tree grows" is not necessarily a misconception. The body of a child with good posture habits will be more likely to develop into a well-balanced structure. And it is the refinement of carriage that suggests the well-bred person. Proper timing, smooth and rhythmical movement, balance and coordination of the body are all factors in the walk through life, physically and mentally.

SCHOLAR IN MEDICAL SCIENCE PROGRAM

An opportunity to start a career in academic medicine is offered to young scientists with the necessary training to hold a regular faculty appointment and to conduct original research through a new program of "post-fellowship" grants, announced by the John and Mary R. Markle Foundation. The purpose of the program, according to John M. Russell, Executive Director of the Foundation, is to attract much-needed talent to academic medicine by giving promising young scientists academic security and financial assistance for a period up to five years. The program will be conducted in cooperation with accredited medical schools in the United States and Canada. Grants of \$25,000, payable to the cooperating school at the rate of \$5,000 annually for a five-year period toward the support of each successful candidate or his research or both, will be available beginning with the academic year 1948-49. If the plan proves successful, the Foundation will appropriate a total of \$1,250,000 to the schools by 1953.

Candidates will be recommended by medical schools and will be limited to young men and women with a particularly strong interest in research and teaching in any of the clinical or preclinical sciences or in the sciences basic to medicine. They will have had training in some special field or combination of fields to qualify them to receive

a regular faculty appointment and to conduct original research. The final choice will be made, on the basis of the schools' recommendations, by regional committees appointed by the Foundation. The young scientists chosen will be known as "Scholars in Medical Science." No fixed number of Scholars will be appointed in any year, but it is expected that approximately fifty will receive appointments during the five-year period. For each Scholar, the school will determine salary and academic rank, encourage research by setting reasonable limits upon teaching and other non-research activities, provide laboratory facilities, and, if necessary, make a financial contribution toward the support of his work.

The Scholar program places the emphasis on the personal qualities and scientific and teaching abilities of the men and women chosen, rather than upon particular research projects or teaching fields in which they may be interested. The program is the result of a survey of medical research and education, recently made by the Foundation, which shows that while there are scholarships and other forms of financial aid for the student in the course of his scientific training and while there are funds available to the scientist once his name is made, there are few sources of help at the beginning of the career of the man who chooses academic medicine.

A pamphlet covering the details of the plan has been sent to all deans of accredited medical schools, and persons interested in being considered as candidates are referred to them for further information.

MALIGNANT DISEASE SEMINAR

An educational seminar covering the entire field of malignant diseases will be held November 12, 13 and 14, 1947 in the auditorium of the Roosevelt Hotel, Jacksonville, Florida. This seminar is under the auspices of the American Cancer Society, Florida Division, and is being staged by the Tumor Clinic of the Duval County Hospital, Jacksonville, Florida.

The prime purpose of this meeting is to make available to the physicians of the southeast the latest knowledge in the diagnosis and management of malignant diseases. The American Cancer Society has devoted considerable effort to lay education,

and it is hoped that this seminar will provide the counterpart within the medical profession by bringing the most recent information to the physicians so that they may keep abreast of developments in the various fields of malignant diseases. This is the first meeting of this nature to be held in this part of the country, and an open invitation is extended to all physicians who find it possible to attend.

The tentative roster of speakers and their subjects are as follows:

1. Tumors of the Female Genital Tract—Dr. Emil Novak, Johns Hopkins Hospital, Baltimore, Maryland.

2. Tumors of the Gastrointestinal Tract—Dr. Samuel Marshall, Lahey Clinic, Boston, Massachusetts.

3. Tumors of the Breast—Dr. Frank Adair, Memorial Hospital, New York City.

4. Tumors of the Genito-Urinary Tract—Dr. Archie Dean, Memorial Hospital, New York City.

5. Lymphomas and Related Tumors—Dr. Lloyd Craver, Memorial Hospital, New York City.

6. Mixed Tumors—Dr. George Pack, Memorial Hospital, New York City.

7. Tumors of the Head and Neck—Dr. James Elliott Scarborough, Winship Clinic, Emory University Hospital, Atlanta, Georgia.

8. Tumors of the Chest—Dr. Oscar T. Clagett, Mayo Clinic, Rochester Minnesota.

9. Carcinoma Research—Dr. George Shimkin, National Cancer Institute, Bethesda, Maryland.

10. Tumor Pathology — Dr. Fred Stewart, Memorial Hospital, New York City.

Since the entire field of malignant diseases will be covered during these three days, it is felt that at least some part of the program will be of interest to every practicing physician. It is hoped and urged that every physician in the vicinity will take advantage of this opportunity.

A final schedule of subjects and speakers will be published in the next issue of this Journal. Details of the meeting may be obtained by writing the Tumor Clinic of the Duval County Hospital, 2000 Jefferson St., Jacksonville 6, Florida.

BALTIMORE MEETING, SOUTHERN MEDICAL ASSOCIATION

November 24, 25, 26

Upon the invitation of the Baltimore City Medical Society, the annual meeting of the Southern Medical Association will be held there during Thanksgiving week of this year. Baltimore, one of the oldest American cities, has been famed in song and story and medical honor too long for new praises to be

sung here. Near by, Francis Scott Key composed the National Anthem. Baltimore has always been a medical center and for generations has educated its quota of physicians. Its two great medical schools, the University of Maryland and Johns Hopkins University, rank high in educational annals. So popular is it for refresher work that the last Southern Medical meeting there in 1936 broke all attendance records. The hotels and apartment houses were filled and the overflow sought rooms in other cities, including Washington.

In the hurly burly of practice one may sometimes forget how many of the great advances of clinical medicine have stemmed from this one city. In Baltimore was developed much of the fundamental work of this century in breast surgery, herniorrhaphy, brain surgery, thyroid, stomach, gynecologic, urologic, plastic, and heart surgery, not to mention such discoveries as epinephrine, and the numerous other invaluable progressive steps in internal medicine and the basic sciences of pathology, anatomy, histology, pharmacology, physiology and biochemistry. Physicians meeting there cannot but be inspired by the memory of great medical contributions, past and current.

The meeting this year will be concentrated into three days instead of three and one-half. Registration will open Monday morning, November 24, at 8:30 with the program for that day conducted by the local profession. The twenty-one sections of the Association will hold their meetings on Tuesday and Wednesday, November 25 and 26. Registration, the majority of the meetings and the scientific and technical exhibits will be found at the Fifth Regiment Armory on Hoffman Street. Other meetings will be conducted at the home of the Medical and Chirurgical Faculty of Maryland and the Baltimore City Medical Society, 1211 Cathedral Street, two and one-half blocks from the Armory.

Hotel reservations should be made through the Hotel Committee, Southern Medical Association Meeting, 1714 O'Sullivan Building, Baltimore 2, Maryland. The hotels will make no reservations directly with physicians, but will take them only from the Committee. First class hotels which will furnish rooms for the meeting are the Altamont,

Arundel, Biltmore, Congress, Emerson, Lord Baltimore, Madison, Maryland, Mt. Royal, New Howard, Sheraton Belvedere, Southern

and Stafford. Persons who plan to attend the meeting should make their reservations immediately through the Hotel Committee.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

A GREAT MEDICAL BENEFACTOR

It has been well said that a true lover of children, flowers and music is one who may be safely trusted and relied upon to do the right thing in a crisis. The subject of this paper was one of the greatest of the great in medical services for children. Our purpose in coming to you is to appeal to you to do everything possible for our children, and our subject is Dr. Luis Morquio. It was he who coined the phrase, "The most important person in the world is a baby." Dr. Morquio said, "When I look upon a newly born child I see, not just a new baby, but a parent of children yet to be born."

Very many years ago a poor Italian shoemaker immigrated to Uruguay. There were ten children born to this man and his wife. One was born in 1867, and he was named Luis—Luis Morquio. When little Luis Morquio came into this world the conditions were very bad for children in the land where he was born. Statistically he had a very slight chance to live. In Uruguay at that time half the children died before they were old enough to enter school. The average span of life in that country then was only twenty-five years.

Who will dare to say that Providence did not have a hand in bringing Luis Morquio into the world in Uruguay in 1867? His record of services and achievements strongly point to the man as one of his Creator's very own, and a man of destiny. At the time of his birth Uruguay was being scourged by yellow fever, smallpox, cholera, and plague, not to mention many other diseases.

There was so much sickness in the Morquio family when Luis was a child that the physician was there very frequently and regularly. Young Luis manifested a very

keen interest in the people who were sick, and in the physicians whom he came to know as the years passed. When he was old enough to think about what he would be when he had become a man, he resolved to be a physician. As his mind was able to grasp the facts he realized that there would be no money for a medical education. However, he charted his course well.

First, by hard study, Luis Morquio succeeded in preparing himself as an accountant. He kept books for half a dozen merchants, working for them nights, and attending medical college in the daytime. In those days Montevideo, Uruguay, had a medical college with only two rooms. Its library was very small, and its books were out of date. There was a sort of amphitheater in which the few students would assemble occasionally, and some of the local physicians would come and lecture and give demonstrations. There was no laboratory for the students and teachers to use in their courses of study.

Student Luis Morquio would make the rounds with some of the physicians as they made visits to and gave treatments to patients in the homes and in the hospitals. This gave him first-hand knowledge of many things, particularly the methods employed in diagnosis, the leading symptoms of many diseases, and the medicines and methods of administration for the various diseases.

With this miserably poor background, the thin and threadbare young man became a certified physician at the age of 25. One of his first patients was a child of two years. Dr. Morquio had seen the disease that he had only in grown people. He knew what physicians gave for it. Acting on the theory that a child is only a miniature grown person, he prescribed the medicine in a smaller quantity than was usually given to adults. Dr. Morquio literally ran through the streets of Montevideo to reach the home

of his patient as quickly as possible. Fortunately he arrived in time to prevent the death-dealing drug from being given to the child.

That frightening experience set Dr. Morquio's fertile mind to work vigorously in an effort to find out many things about children and their diseases which he did not know. Not only did he begin studying the characteristics of children as they differ from the grown-ups, but he also thought deeply into the practice of considering children just as small human beings. He concluded, and rightly, that the first few years of the life of a child will determine the later life for better or for worse.

About this time Dr. Morquio read about some world-famous physicians in Paris who were making a special study of the health of children—the one thing he was thinking about above others.

Money was scarce. Dr. Morquio scraped together all the money he had, and borrowed enough more to take care of himself in Paris for two years. Soon he was sailing for Paris as a steerage passenger.

On arrival in Paris he found the most wonderful laboratory the world possessed at that time—the Pasteur Institute Laboratory. He gave his ears and his mind to the wise words of the great physicians there as they taught about child health in general and syphilis in particular as a menace to children. He filled great stacks of notebooks with memoranda made as the great physicians lectured.

When Dr. Morquio returned home to Montevideo, he was the only child specialist in all of Uruguay. He could have had a richly rewarding private practice for himself. He chose instead to teach other physicians in the colleges, and to treat the inmates of the Orphans Asylum. He could treat 20 to 40 slum children a day, and then take his notes on those treatments back to the college as material for his lectures. He set some students in the Medical College to research work on individual case studies—the first such research work ever done in Uruguay.

Dr. Morquio discovered that about 50 per cent of the children died of what physicians called "colic." He learned that they actually died of dysenteries and other bacterial poisoning.

For this illness physicians usually gave something to keep the afflicted child quiet and let it live or die, as the end-results might be. Dr. Morquio taught his pupils to find the cause or causes of these illnesses, and root them out. They soon had campaigns going almost all over the Nation, getting rid of filth, correcting faulty diets, and teaching the people to exercise precaution against exposing children to contagious diseases.

Dr. Morquio had hard going in many of his reformation endeavors, but he gradually won the people over. Many of the most intelligent public leaders were won over by him to full agreement that, "The most important person in the world is the baby."

Dr. Morquio persuaded the government to build a special school of pediatrics—a school dealing with children's diseases. From the graduates of this school Dr. Morquio organized what he called "A Pediatric Society." The members were really taking postgraduate work, and the studies were so planned that no physician ever could finish the course. Some of his original students continued to work under his guidance until his death. His fame eventually drew specialists from other countries to study at his feet. However, Dr. Morquio always called himself "only the oldest student of this clinic." He frequently said to his graying students "when you don't learn something new each day, you have begun to die."

Because of the brilliant work done by Dr. Luis Morquio, the Uruguayan child's status is unique. There are no illegitimate children under the law in Uruguay. Every baby has the legal right to a name, and to inheritance. The National Child Council serves as legal guardian of every child in need. This organization makes careful and thorough investigation of the paternity of every child born outside wedlock, and it enforces the laws that guarantee all children an equal start in life.

Because of Dr. Luis Morquio's love for and interest in children, indigent mothers get proper prenatal feeding, and their children are born in the official "Cradle House." Working mothers *must* rest at least one month before and one month after giving birth to child.

Visiting nurses—another wise measure credited to Dr. Morquio—check the progress

of new-born babies in homes unable to pay for medical care. Nursery schools care for the children of working mothers until the children are three years old.

Each child approaching primary school age is vaccinated against smallpox, typhoid, diphtheria, and other diseases. School children who are suffering from lack of proper nourishment, and those with tendencies to the development of pulmonary, rheumatic fever or cardiac trouble, are taken daily to open-air schools. There are twenty such schools in the country. There they are beneficiaries of good food, and well directed periods of play, study and rest.

Dr. Luis Morquio's wise and energetic efforts have borne fruit far beyond the boundaries of his native land. In 1927, when this great man influenced the founding of the International American Institute for the Protection of Children, he extended his helpful influence to the children of a whole hemisphere.

From its offices in Montevideo, the International American Institute for the Protection of Children reaches every child specialist, every child welfare organization, every government health department in Latin America with a river of vital information. That Institute—a welfare child of Dr. Morquio's—is ever ready to answer questions about child-health problems, even when such questions come from the most humble and obscure physicians. It stands ready with wise advice on health legislation, and the building and financing of new movements for child protection and welfare.

The code of laws to guard the interests of children in Uruguay, sponsored by Dr. Morquio, has been adopted, with only a few changes, by nearly all the Latin-American nations. Today, we are told, child-health centers as far away as Peru and Mexico are named for Dr. Luis Morquio.

When Dr. Luis Morquio passed away in 1935 he was recognized as one of the greatest men in medicine. He was one of the few foreigners elected to the French Academy of Medicine.

The basic statements contained in this paper have come from The Pan American Magazine of the America's. The Pan American tells us that, largely through the work of Dr. Morquio, Uruguay's people are among the healthiest in the world. Uru-

guay's death rate is reported to be the lowest in the hemisphere.

This story comes to you, as already indicated, to inspire you to greater activities in behalf of the health of our people—especially our children. Every one of us can do a little more, and a little better work for our children's health and welfare.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

August 1947

Examination for diphtheria bacilli and Vincent's	331
Agglutination tests (typhoid, Brill's and undulant fever)	1,373
Typhoid cultures (blood, feces and urine)	1,193
Examinations for malaria	1,095
Examinations for intestinal parasites	2,959
Serologic tests for syphilis (blood and spinal fluid)	26,726
Darkfield examinations	31
Examinations for gonococci	3,315
Examinations for tubercle bacilli	2,151
Examinations for meningococci	2
Examinations for Negri bodies (microscopic)	81
Water examinations	1,574
Milk and dairy products examination	3,160
Miscellaneous	373
Total	44,374

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1947

	June	July	E. E.* July
Typhoid	2	7	27
Typhus	14	22	65
Malaria	57	538	547
Smallpox	0	0	0
Measles	510	129	133
Scarlet fever	11	9	35
Whooping cough	232	231	153
Diphtheria	6	7	20
Influenza	24	82	29
Mumps	57	29	62
Poliomyelitis	5	1	21
Encephalitis	0	0	2
Chickenpox	35	18	15
Tetanus	2	3	4
Tuberculosis	386	223	298
Pellagra	3	0	9
Meningitis	7	11	10
Pneumonia	93	90	124
Syphilis	1649	1319	1463
Chancroid	17	22	13
Gonorrhea	837	740	510
Tularemia	2	2	1
Undulant fever	15	19	8
Amebic dysentery	1	1	0
Cancer	270	261	0
Rabies—Human cases	1	0	0
Positive animal heads	36	37	0

— As reported by physicians and including the deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

SEPTIC TANKS AND SEPTIC TANK PROBLEMS

Contributed by

R. V. Barnes, M. S. E.

Pr. San. and P. H. Eng.

A septic tank is defined as a water-tight structure, usually divided into compartments into which sewage is led for treatment. Another definition is: "A water-tight tank or receptacle used as temporary reservoir for the purpose of receiving or depositing the sewage, contents or drainage from a water closet and which is connected with a system of subsurface drainage or other outlet in such a manner as will afford final disposal of such sewage contents or drainage in a sanitary manner."

The tank is actually a settling basin in which much of the solid matter of the sewage is retained. A large portion of this solid matter is liquefied through the action of bacteria which feed and live on it. That portion of the solids called sludge, which is not liquefied, remains on the bottom of the tank. Another portion floats on the top as scum. The liquid, from which a greater part of the solids have been settled out and which passes out of the tank at the end opposite to the entrance, is known as the "effluent."

The size of the septic tank should be based upon an average daily flow of sewage, a retention period of approximately 24 hours, and adequate storage of sludge. The septic tanks shown in our bulletins are designed on the basis of 50 gallons per capita per day, the above retention period, and storage for one year's accumulation of sludge. These septic tanks have proved satisfactory under usual conditions found in Alabama.

The basic principles and provisions of our septic tank bulletins were drawn up in 1926 and have been in use without major changes since that date. At that time this Department was considered rather radical for requiring or recommending the large capacities. After more than twenty years, thousands upon thousands of installations have borne out the wisdom of the original concepts and assumptions.

Now, the "Recommendations of the Joint Committee on Rural Sanitation" goes much

farther than we do in regard to capacities as far as family size tanks are concerned. They recommend that the inlet chamber of a two-compartment tank have a capacity of at least 500 gallons. The family size septic tank as shown in our bulletin S-2 has a capacity of 500 gallons without the baffle and slightly under this figure with the baffle. In view of past record of service, we feel that a radical increase in capacity of this tank is not warranted. From an economic and administrative standpoint, we feel that more sanitation will be obtained by adhering to the one capacity for individual homes.

The bulletin outlining the Department's recommendations for the family size septic tank is now in the process of being revised and reprinted. By a change of effective depth, the capacity of the tank will be increased to slightly above 500 gallons even when the space occupied by the baffle is deducted. This small increase in capacity will be accomplished without a change in the over-all dimensions of the tank.

The Committee also suggests, among other things, to omit the partition or baffle in the family-size septic tank. It is wondered whether sufficient research has been made to justify an unqualified statement in this connection. We have a submerged inlet and outlet, plus the partition which divides the tank into two chambers. This arrangement has worked so successfully until the Department hesitates to make any change without adequate research to prove or disprove its usefulness. It is apparent that the baffle serves at least three very useful purposes. First, the greater amount and thickness of the scum is retained in the first chamber reducing the chance of solids reaching and clogging the disposal field. Second, the eight inch by eight inch opening, located one foot and three inches from the bottom of the tank, prevents any possibilities of the sewage being short circuited from the inlet directly to the outlet, thereby reducing the retention period from 24 hours to a matter of minutes. Another very practical use of the partition is the fact that, where the sludge accumulates to a certain depth, the septic tank will cease to function properly and will require, in most instances, cleaning out before the disposal lines become

clogged. It is felt that without this provision there is nothing to prevent the sludge from building up to such a depth that it will be continuously fed into the disposal field and eventually require the rehabilitation of both the tank and field.

It will be noticed that our rules and regulations on sanitation state "local ordinances or regulations shall govern the design and installation of septic tanks and disposal fields." The question often arises why the Department does not adopt definite regulations and requirements governing the installation of septic tanks as have been passed for approved pit privies. Should such regulations be adopted, then it would be necessary to prepare, not recommendations, but definite plans and specifications for septic tanks. It is a fairly easy matter to stipulate definite plans and specifications for pit privy construction but plans and specifications for septic tanks would of necessity have to be long, tedious and involved. The various types of materials of construction, as steel, and specifying and devising a method of determining copper contents would have to be given consideration. If ample specifications were prepared to properly care for all possibilities, they would be so involved that only the one preparing them would be able to adequately interpret them. Uniform and practical application of them in the field would be impossible.

In addition to the foregoing definition given of a septic tank, the model sanitation ordinance for consideration and adoption by municipalities states: "Provided, that no septic tank shall be installed under provisions of this ordinance having less than three hundred (300) gallons effective capacity, nor less than thirty (30) inches of effective depth. Provided further, that no tank shall be used with less than one hundred and fifty (150) feet of drain tile laid in not less than six (6) inches of porous filtering material. The size and length of drain, and the depth, size and material of the filtering material shall be approved by the County Board of Health of _____, County, Alabama, or its duly authorized representatives." When such ordinances are adopted and enforced by municipalities, the County Health Department has no difficulty in securing proper installations. However, where

such ordinances are not adopted, where not enforced in police jurisdictions and in the strictly rural areas of the counties, the County Health Departments have only our recommendations to offer and cannot require a minimum as, in many cases, no local ordinance or regulation is available for enforcement. The question is then asked, "Why not adopt minimum state-wide requirements as stated above rather than leave it to local ordinances and regulations?" The question is a good one; especially when definite plans and specifications are not considered advisable. This question should and will be given careful consideration.

Septic tanks are manufactured of various materials, such as steel, cement, iron, terra cotta and alloys, by commercial firms. There may be cases where it would be cheaper to install a ready-made tank. Comparison as to cost and serviceableness should be made on durability, cost of installation, number of gallons, effective depth, and total capacity per capita. It should be remembered that the smaller the number of gallons per capita the more frequent the cleaning and the greater the clogging of the field. In selecting a commercial tank, the effective depth and per capita capacity should be closely studied.

In some localities, precast concrete septic tanks are used. Where the above minimum requirements are maintained no objection is voiced against their use. There is one other requirement or recommendation that the Department insists upon. It is that the tank must be in one integral unit. Some firms have proposed that the tank be poured in sections and assembled at the site of installation. The joints between the sections were to be sealed by the use of an asphaltic or similar mastic compound. While it is realized that it is possible for skilled workmen to obtain a water-tight joint by this method, the personal equation must be considered. Chances are that only a few water-tight installations would be obtained. Therefore, we recommend that only adequate sized, one integral unit tanks be used.

The reason for wanting to pour the tank in sections was, of course, to facilitate the transporting of the tank from the central plant to the point of installation. This obstacle may be overcome, in part at least, by reducing the thickness of the walls and

bottom of the tank from four (4) inches to two and one half (2½) inches. This may be accomplished if carefully graded aggregates are used and sufficient and properly located reinforcement is placed in a 1:2:4 or equal concrete mixture. Extreme care should be used in installing these tanks on a firm and level footing.

Congenital Pyloric Stenosis—Early diagnosis is now more likely because most newborn babies are under the observation of competent pediatricians or family physicians, and persistent vomiting beginning in the second, third, or fourth week of life quickly arouses suspicion. If, in spite of change to a concentrated formula, or thickened feedings, and the use of antispasmodic and sedative drugs, vomiting continues and becomes projectile, visible peristaltic waves appear, and finally a pyloric tumor is palpated, there should be no further delay in resorting to surgery.

It is true that, even in such clear-cut cases, surgery may sometimes be avoided by tenaciously clinging to medical treatment. This course is pursued, however, at the cost of days or weeks of painstaking care and constant supervision, at the constant risk of intercurrent disease induced by low resistance, and certainly greater risk if the operation ultimately becomes a necessity, because the infant will be in far less favorable condition to stand the surgery.

It is also true that many babies who vomit persistently and projectily and present definite, visible peristalsis may have only a mild degree of hypertrophy of the pyloric musculature and may respond so favorably to medical management as to make surgical treatment unnecessary. The best criterion on which to base the decision to operate or not is the weight. If medical management produces prompt and continued weight gain, even though vomiting is not entirely relieved, it may be continued safely and operation postponed indefinitely.

The differentiation is primarily clinical. If the vomiting can be controlled promptly and sufficiently by conservative means, well and good. If not, surgery should be resorted to without undue delay. The attempt to distinguish between pylorospasm and hypertrophic pyloric stenosis is of little value. Actually, there is probably an element of each condition in most cases. Those cases in which the element of spasm is predominant will more likely respond to medical treatment, while those in which there is pronounced muscular thickening will require surgery. Therapeutic trial alone will give the answer. . . .

Early diagnosis and early decision to operate has largely relieved the surgeon of the burden of operating on almost moribund babies, as was often true in former times. Even in the presence of continued vomiting, a fair state of nutrition and hydration can be maintained for considerable periods by use of blood transfusions and parenteral injections of glucose.—*Duckett, Texas State J. Med., Sept. '47.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND DEATHS FROM CERTAIN IMPORTANT CAUSES FOR MAY 1947, AND COMPARATIVE RATES FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During May 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	6483	**	**	25.4	20.3	23.1
Stillbirths	238	**	**	35.4	30.9	30.1
Deaths, exclusive of stillbirths	2118	1224	894	8.3	7.6	8.4
Infant deaths:						
Under one year	254	142	112	39.2	40.9	41.3
Under one month	177	109	68	27.3	29.0	26.9
Typhoid and paratyphoid 1, 2					0.4	0.4
Epidemic cerebrospinal meningitis 6	2		2	0.8	0.4	3.2
Whooping cough 9	13		13	5.1	1.2	5.5
Diphtheria 10	2	1	1	0.8	0.4	0.4
Tuberculosis, all forms 13-22	103	44	59	40.4	34.9	37.6
Malaria 28	2	1	1	0.8	0.4	1.2
Syphilis 30	27	8	19	10.6	10.2	9.9
Influenza 33	19	8	11	7.4	7.1	7.1
Measles 35	5	2	3	2.0	2.7	0.4
Poliomyelitis 36						0.9
Encephalitis 37					0.8	
Typhus fever 39	2	2		0.8		1.6
Cancer, all forms 45-55	181	135	46	71.0	70.2	72.9
Diabetes mellitus 61	30	21	9	11.8	11.8	10.7
Pellagra 69	15	10	5	5.9	3.5	3.2
Alcoholism 77	1	1		0.4	0.8	
Intracranial lesions 83	223	126	97	87.5	76.9	90.3
Diseases of the heart 90-95	490	296	194	192.2	178.8	175.9
Diseases of the arteries 96-99	25	17	8	9.8	7.1	11.9
Bronchitis 106	5	3	2	2.0	1.2	1.6
Pneumonia, all forms 107-109	79	44	35	31.0	27.4	33.7
Diarrhea and enteritis (under 2 years) 119	4	2	2	1.6	2.7	8.3
Diarrhea and enteritis (2 and over) 120	5	3	2	2.0		1.2
Appendicitis 121	9	4	5	3.5	5.5	6.7
Hernia and intestinal obstruction 122	19	10	9	7.4	5.5	8.7
Cirrhosis of the liver 124	14	10	4	5.5	5.1	3.2
Nephritis, all forms 130-132	127	70	57	49.8	57.3	68.9
Diseases of puerperal state 140-150	22	9	13	32.7	35.5	28.3
Puerperal septicemia 140, 142a, 147	4	1	3	6.0	5.6	13.3
Suicide 163-164	13	13		5.1	3.1	3.6
Homicide 165-168	38	11	27	14.9	12.9	11.1
Accidents, all types 169-195	180	122	58	70.6	55.7	54.7
Motor vehicle accidents 170	61	50	11	23.9	19.2	9.9
All other known causes	358	215	143	140.4	116.5	138.2
Ill-defined and unknown causes 199-200	105	36	69	41.2	48.6	62.6

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the May reports of the years specified.

**Not available.

BOOK ABSTRACTS AND REVIEWS

The Years After Fifty. By Wingate M. Johnson, M. D., Professor of Clinical Medicine and Chief of Private Diagnostic Clinic, Bowman Gray School of Medicine of Wake Forest College. With foreword by Morris Fishbein, M. D., Editor, Journal of the American Medical Association. Cloth. Price, \$2.00. Pp. 153. New York: McGraw-Hill Book Company, Inc.

This little book was written "to help the intelligent man and woman prepare for the latter half of life, through discussion of the various problems—physical, mental and, to some extent, spiritual—that are peculiar to this period." Despite Doctor Morris Fishbein's remarks on the cover page that the author "has tried to avoid giving needless alarm, while at the same time presenting realistically the problems which the aging person may encounter," the reviewer feels that the part of the book devoted to the diseases of old age would tend naturally to worry the man over fifty. Just as a medical student, as he reads of each new disease, discovers some symptom of each one present in himself and decides that he has tuberculosis, syphilis and cancer, so does the average person, lacking medical education, tend to worry over a little knowledge of the diseases he might have. Even the little humorous verse about grandfather, whose longevity was prolonged because he did not know he had high blood pressure, will not dispel the fear of hypertension. The fact that some people live and work for years after a coronary thrombosis does not offset the fact that many die suddenly without warning from the same disease process. You cannot cheer a man by enumerating the disturbances most likely to plague his declining years. The man who reads this book is likely to do much self-doctoring. A little learning is a dangerous thing.

There is a philosophy of life that makes some people approach old age cheerfully and bravely while others fear senility and death and resent what is a natural phenomenon. Doctor Johnson quotes briefly philosophical work from Cicero to Osler dealing with old age and how to accept it gracefully. The quotations are too brief to be of value. The original would serve better than the brief quotation. It is this phase of the elderly person's attitude which is most important. Despite great physical handicaps, many older people remain active and productive. Others become selfish, petulant, introspective, self-pitying, tyrannical and downright mean. The first group thinks primarily of others, the second, primarily of themselves. The first group probably grew up without pains, became adults similarly blest, and grew old without remorse. The second probably never became mature, never met problems squarely, and developed a selfishness long before old age appeared. This latter type of person needs help, but it is a help of a philosophical

type. Enumerating all the other ills he might have will not help him.

Since the life expectancy of the individual has increased considerably, there are proportionally more old people living now than ever before. The number will increase. The medical professor should get to know more about the diseases of old age but the physician should also be able to instill into his older patient a better philosophy of old age and death. When one has lived to seventy years, one should be grateful for every day of life thereafter. Death must be considered as the natural end of every life and as welcome to the aged as sleep to a tired person.

If you are approaching fifty, this book might help you but the reviewer would not advise it as a handbook for the patient.

Clarence K. Weil, M. D.

Diseases of Metabolism. Detailed Methods of Diagnosis and Treatment. A Text for the Practitioner. Edited by Garfield G. Duncan, M. D., Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia. Second edition. Cloth. Price \$12.00. Pp. 1045, with 167 figures. Philadelphia and London: W. B. Saunders Company, 1947.

Far better than any description which the reviewer can give relative to the purpose of Duncan's book on Diseases of Metabolism are the words of the late Sir Frederick Banting taken from the introduction to the first edition. "The purpose of this book is to present the fundamental knowledge of metabolism, to apply this knowledge to the explanation of diseases of metabolism and to outline a rational basis for the treatment of these diseases." Every one of these objectives has been successfully carried out by the editor and his associates. The contributors are all authorities in their field and it would be difficult to say that any one of them has done a better job than the others, so well written is every single chapter.

The first few chapters of the book deal with the theoretical or laboratory phases of metabolism, including metabolism of carbohydrates, proteins and lipides, the metabolism of minerals and the disturbances of water balance. The remainder of the book deals with the clinical disorders of metabolism, a field for more inclusive than one might think. This field includes not only diabetes mellitus, diabetes insipidus, hyperinsulinism, obesity and acidosis and alkalosis, but, in addition, the subject of under-nutrition, of the various vitamin deficiencies, of the anemias due to lack of iron or of the intrinsic factor, gout, Addison's disease, tetany, hyperthyroidism and hypothyroidism and the various abnormalities of calcium and phosphorous metabolism, and the

disturbances of water balance with resulting edema.

The advances made in this field of medicine during the past decade have been striking. A few years ago, we thought that vitamins were substances of unknown composition found in foods in infinitesimally small amounts and essential for the maintenance of health. We now know the chemical composition of all of the original vitamins and of many new ones. We understand the exact part they play in the human organism. We can measure them in milligrams instead of units.

Our knowledge of carbohydrate metabolism has increased so much that the chapter on that subject will appear strange, indeed, to any one whose training was received twenty years ago. Our understanding of the factors producing anemia have made tremendous advances since the days when Minot and Murphy made the empiric observation that pernicious anemia was benefited by the addition of liver, kidney or spleen to the diet. The mysteries of edema are giving way to a clear understanding of the many factors which contribute to this frequently encountered symptom. In no field of medicine has the progress

been attributable so much to the laboratory investigator rather than to the physician. The practitioner of medicine who would treat the various metabolic disturbances needs first a knowledge of the fundamental physiology and chemistry of nutrition.

The second edition of this book, published five years after the first, includes advances made in the field of metabolism during the war and post-war years when ample opportunities were available in the fields of combat to study the effects of malnutrition on a hitherto undreamed of scale. Among the new subjects are the following: the influence of protein in wound healing and immunity, the clinical application of our newer knowledge in alterations of fluid balance, and the many advances in the fields of vitamin therapy, including the part played by folic acid in the fields of nutrition and hematology.

This book is not one that can be read lightly. It must be studied in detail but it serves a useful purpose also for those who want a good reference on some of the phases of metabolic diseases. The chapters on diabetes and obesity will appeal to any physician.

Clarence K. Weil, M. D.

AMERICAN MEDICAL ASSOCIATION NEWS

DENTISTRY CAN PLAY IMPORTANT ROLE IN PREVENTING DEAFNESS

Many of the 10 million Americans who suffer with impaired hearing should be sent to a dentist, according to an article in the current issue of the Archives of Otolaryngology, published by the American Medical Association. And, says the writer, many fewer Americans would be so afflicted if more attention were paid to the role that intelligent dentistry can play in the prevention and control of deafness.

The writer, David J. Goodfriend, D.D.S. of Philadelphia, is reporting on studies carried out in the department of dentistry, medicine and psychology of the University of Pennsylvania. Workers in this field, says Dr. Goodfriend, have established the importance of abnormalities of dental bite in producing certain hearing troubles "as thoroughly as Koch proved that the tubercle bacillus causes tuberculosis." Their studies point to dental treatment as the proper therapy.

Anatomical studies show that any abnormality of dental bite directly affects the eustachian tube, which brings about communication between the middle ear and the pharynx by adjusting air pressure in the

middle ear to that of the air outside. Dr. Goodfriend's article does not claim that some such condition is at the root of every hearing defect, nor that the one automatically brings about the other. But it does state that such abnormalities "probably influence about 40 per cent of all deafness."

Dr. Goodfriend found that:

—At the University's special ear and throat clinic, 23 of the first 25 patients with hearing complaints but without any abnormalities in the ear itself showed abnormalities of bite, or some position of the teeth which interfered with proper movements of the jaw in chewing.

—Studies of a group of 168 dental students showed that 55 per cent had dental malocclusions; the hearing of this group was 13 per cent less than that of the other 45 per cent.

The study indicates that proper dental treatment of such cases often brings excellent results, particularly in younger patients. Seventy per cent of all deafness is of the progressive adult type which up to now has been considered incurable. Speaking from the University's studies and from 21 years of clinical experience, Dr. Goodfriend asserts that in certain patients proper dental treatment will help even progres-

sive deafness of short duration, and in others it will slow down the rate at which the hearing is deteriorating. Furthermore, it will cure certain patients with neuralgia, or nervous pain, and dizziness due to ear trouble. The patient with a ringing in the ears may also be benefited.

Since so much depends upon how long the hearing has been disturbed, however, the keynote of this work is prevention. Writes Dr. Goodfriend:

"These facts should encourage the earliest practical treatment of dental abnormalities of bite as a preventive procedure."

DOCTORS URGE INVESTIGATION OF NEW USES FOR DIPHENHYDRAMINE

Diphenhydramine, marketed under the trade name of benadryl, the new drug which has been chiefly used for relief in hives and seasonal hay fever, may have many unexplored uses, two Washington, D. C., doctors suggest.

In an article appearing in the September 6 issue of *The Journal of the American Medical Association*, Lester S. Blumenthal, M. D., of the George Washington University School of Medicine, and Morris H. Rosenberg, M. D., of the George Washington University Hospital, report on a study of 140 cases in which diphenhydramine was used to treat many different conditions. Some of the most encouraging results were obtained from patients suffering from contact dermatitis, a skin inflammation caused by allergy. The results also indicated that the drug may be helpful in preventing the severe reactions sometimes provoked by blood transfusions.

It is believed that the symptoms which occur in allergic disorders are due to the release by the tissues of histamine or of some histamine-like chemical compound which overstimulates the nervous system. "Benadryl" tends to cancel the effect of histamine. Using diphenhydramine in conditions generally accepted as being allergic as well as in other states which show similar symptoms but which are not necessarily allergic, Dr. Blumenthal and Dr. Rosenberg report the following:

—Of 29 patients with hives, 24 received pronounced relief, one obtained moderate relief and four were not relieved.

—Of 23 patients with seasonal hay fever, 15 received pronounced relief, five obtained moderate relief and three were not benefited. Some of the patients responded differently to the drug at different times, but the writers did not notice that the drug became less efficacious when used over a long period of time.

—Of 16 patients with contact dermatitis, 12 received pronounced relief and four were moderately improved.

—Of 11 patients suffering with migraine—periodic headaches accompanied by nausea and various sensory disturbances—four received pronounced relief, two obtained moderate relief and five received no relief.

—The drug did not prove particularly effective in bronchial asthma cases.

Sixteen of the patients already mentioned had the drug injected into their veins, rather than taking it by mouth. Since their response, if present, was immediate, the doctors believe that the administration of the drug in this manner makes it easier to be sure that it is solely responsible for bringing relief to a patient.

In a number of cases in which patients undergoing blood transfusions received the drug the results were inconclusive, but it was the impression of the writers that several patients may have been prevented from having transfusion reactions by the use of the drug.

The doctors reported no serious side effects in any of their cases. Drowsiness, the most common side effect, was usually successfully combated by the administration of benzedrine sulfate in conjunction with diphenhydramine.

"It is concluded," Dr. Blumenthal and Dr. Rosenberg write, "that the administration of diphenhydramine hydrochloride has a sound physiologic basis, and it is suggested that there should be further investigation of the many possible fields of usefulness for this and related drugs."

Twenty-five years ago the main problem in the recognition of tuberculosis was the perfection of diagnostic techniques . . . Today the urgent question is how to apply one or more of the available satisfactory procedures in such way as to detect tuberculosis in the incipient stage . . . and at a cost within reach of the community. Henry D. Chadwick, M.D. and Alton S. Pope, M.D. *The Modern Attack on Tuberculosis*. The Commonwealth Fund, 1946.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

November 1947

No. 5

THE PART THAT THE DOCTORS OF THE STATE MEDICAL ASSOCIATION HAVE PLAYED IN THE DEVELOPMENT OF PUBLIC HEALTH IN ALABAMA

W. K. SHARP, JR., M. D.

Director, District 2

U. S Public Health Service

Richmond, Virginia

It is most fitting that we meet here today to pay tribute to the medical men of Alabama. Naturally I am very proud to return to the state at this time to participate in the centennial celebration of the Medical Association of the State of Alabama. This is also the 100th anniversary of the American Medical Association, the New York Academy of Medicine and many other organizations; and the centennial celebration of many notables; namely, Edison, Bell and others. We in America like celebrations, parades and jubilees. We never fail to pay tribute to our leaders; monuments are erected to our great pioneers, statesmen, scientists, poets and those who have builded for the greatness of the nation. Memorial buildings have been erected for our dead. This has become especially true since the close of World War I. Every civilized nation has entombed the body of an unknown soldier in its most sacred spot. Ours is at Arlington. The monuments erected to J. Marion Sims at 42nd Street, New York, to Dr. Ephraim McDowell, at Danville, Kentucky, and especially those in honor of Alabama's distinguished State Health Officers, pay tribute to these great leaders.

The Medical Association of the State of Alabama in 1875 became by legislative act the Alabama State Board of Health, the

Read before the Association in annual session, Birmingham, April 15, 1947.

ninth State in the Union to organize. This Association is a unique scientific society; its programs, aims and objectives are effective; it enjoys State and Nation-wide influence. In 1879 the first State Health Officer was chosen and the Legislature made an appropriation of \$3,000 annually for his work. It is clear the cornerstone was laid for the structure which was being built but which was by no means complete.

In 1888 there appeared in Decatur, Alabama, an outbreak of yellow fever. So much excitement and uneasiness prevailed throughout the South that Congress placed at the disposal of the President of the United States \$5,000,000 for the purpose of preventing the reappearance of the disease. The people of Decatur petitioned the President to burn and rebuild their village. The President expressed his willingness to comply, provided a request was made by the Governor of Alabama. Early in March 1889 in the City of Montgomery, the Governor invited a few sanitarians to advise with him. An official of the L. & N. Railroad stated that his company would not await the coming of hot weather for the reappearance of yellow fever but would immediately proceed to move its line and leave the village 25 miles from the nearest station. After two days' deliberation the Governor called upon the State Health Officer for his opinion. Dr. Cochran for two hours in a quiet conversa-

tional tone reviewed clearly the history of every invasion of the United States by the virus of yellow fever. He concluded his remarks by saying: "Mr. Governor, you may have my resignation whenever you wish it, but so long as I am Health Officer, I shall not advise you to squander the money which would be unnecessarily and unwisely expended in burning and rebuilding the village of Decatur." Decatur was not burned and there has been no case of yellow fever in the village since 1888.¹

In 1907 the Legislature of Alabama appropriated \$15,000 annually for public health work and in 1911 this was increased to \$25,000 per annum.²

Probably the real beginning of public health work in Alabama was due to the campaign started by the Rockefeller Hookworm Commission. Dr. Carl Grote and three other physicians made intensive surveys throughout the State. Following this campaign, in 1914 Walker County, at the request of the County Medical Society, organized the first full-time local health department, and it was among the first few organized in the United States. Dr. Grote, a fine physician and competent health officer, was elected as the Walker County health officer and his work was outstanding. Dr. Grote also served later as full-time health officer of Madison County. His services, first as a physician and second as a health officer, were of tremendous influence in the development of public health programs in the State of Alabama.

In 1917 Dr. Samuel Welch of Talladega was elected State Health Officer. In Dr. Welch's report to the State Medical Association in 1917, he stated: "Efforts are being made to establish all-time health officers in about six counties in the State now. We had thought that at least three counties would have inaugurated the unified health system to be reported at the meeting of this Association, but unfortunately these things hang fire. We hope, however, to be able to report in the very near future six or seven more counties with full-time health officers." He stated further "... We have spent years and years in organizing until we have

what to my mind is about as perfect an organization as we can formulate. The time has come to put the organization into operation and do the things which it was organized to accomplish."

I beg to quote in part from the address made by your President, Dr. Henry Green, of Dothan, in 1917, thirty years ago: "A matter of extreme importance to our public health system is the selection of our county health officers. The time has arrived when we must have health officers who are not alone willing to put push and energy into the work but who are trained in matters relating to public health work. The full-time health officer is an urgent necessity. No longer must it be a side line. In order to obtain the services of men of this kind, we must have more money to pay them. We cannot hope nor expect to obtain expert full-time health officers for the wages that have been paid our 'side-line' men. I trust that every member who hears or reads this message will go home resolved to do what he can to get an increased appropriation sufficient to pay a full-time health officer in his county. Until this is done Alabama must perforce lag behind in the procession."³

In 1917 Congress appropriated \$25,000 for rural health work; \$2,400 of this amount was allotted by the U. S. Public Health Service to Talladega County⁴ to assist in the development and maintenance of a full-time health organization. Apparently this was the beginning of Federal financial aid to the State and local health departments in Alabama.

By an Act of the Legislature in 1919 part-time health officers were abolished. This act probably established a precedent that has not been equalled by any State. During that same year your State Health Officer very materially increased public health work; the laboratory system was reorganized on a district basis, making this service more readily available to physicians; the Bureau of Vital Statistics was reorganized and the model law enacted; the Bureau of Engineering broadened its scope of activity so as to improve water supplies, malaria control and food-handling establishments; and

1. Vaughan, Victor: *A Doctor's Memories*, pp.172 and 177.

2. Cannon, Douglas L.: "Alabama's 89 Years of Medical Organization, J.M.A. Ala. 5: 387-388.

3. Transactions of the Medical Association of the State of Alabama, 1917, 270-271.

4. Public Health Bulletin No. 222, p. 80 and p. 102.

there was a marked increase of interest in the development of county health units.

In forty years' time it is estimated more than 20,000 voluntary health agencies have organized—National, State and local—to attack virtually every disease and health problem. It is estimated that the voluntary agencies contribute annually not less than \$100,000,000 to these agencies. With the exception of the American Red Cross and a few tuberculosis societies there was scarcely a local health agency at the turn of the century.

We have, on the one hand, the official health agencies armed with Federal, State and local appropriations operating under the laws of our respective governments and, on the other, a fine group of intelligent well meaning individuals organized to direct voluntary organizations in our health and welfare schemes.

It was not, however, until the enactment of the Social Security Act in 1935 that public health really received its first recognition on a national basis. This provided increased funds for the Alabama State Board of Health to advance public health.

Now, more than ever in its history, with Federal, State, local and voluntary agency funds increased annually, the foundation was laid. Therefore, Dr. Welch, your brilliant representative, was fully prepared to go forward with the program.

In 1938 appropriations were made by Congress to assist States and local governments in the control of venereal diseases.

In 1945 an appropriation was made by Congress to enable the Public Health Service to make studies, investigations and demonstrations and to assist State health authorities in tuberculosis control programs.

In 1946 the 79th Congress enacted Public Law 725, originally known as the Hill-Burton Bill. A distinguished senator from Alabama was one of the co-authors of this bill. The purpose of this act is to provide Federal assistance to the States to the end that the necessary physical facilities for furnishing adequate hospital, clinic and similar services to all their people will be attained, especially in the rural and other economically poor areas where the least adequate hospital and related services are available.

The 79th Congress also enacted the National Mental Health Act. The purpose of

this act is to improve the mental health of the people of the United States through conducting of research, investigations, experiments and demonstrations relating to the cause, diagnosis, treatment and prevention of psychiatric disorders.

There is nothing difficult or new in the method for grants-in-aid to States. Since 1917, and especially since 1936, the Public Health Service has been actively engaged in cooperation with the several States in the organization and maintenance of State and local health services. This cooperation has been conducted through technical assistance, assignment of Service officers on request from States to duty within the State, and financial participation in State and local health programs.

The present Federal-State cooperative health programs concern themselves with public health work, special programs designed to attack special problems, as in tuberculosis, venereal disease control, cancer, industrial hygiene, maternal and child health services, services for crippled children, hospital facilities and mental health.

Since Alabama from 1917 to 1938 provided a minimum health service to all of its 67 counties with increase of funds available to the States, there is no doubt that expansion is in order, either through the 67 county departments or the modified plan as proposed by Dr. Douglas L. Cannon, for 43 local departments, or the plan recommended by the Committee on Administrative Practice of the American Public Health Association for 36 local units.⁵

One is more impressed as time goes on by this extraordinary growth of progress and after two world wars the sudden and unusual interest manifested on the part of the country as a whole in our general medical public health work. In my own career I have seen the influence of this joint action by our Federal, State and local governments steadily expand our health and medical facilities. Today this is the potent factor in the cause for humanity. The eminent power our country has now attained in this regard has brought us face to face with our greatest opportunity for leadership and cooperation ever known in the history of our country. Briefly I would like to summarize a few salient points describing the part the

5. Public Health on the Home Front, p. 9.

doctors of your State Medical Association have played in the development of public health:

(1) In 1875, nearly three-fourths of a century ago, the Legislature of the State of Alabama approved a measure designating the Medical Association of the State of Alabama as the State Board of Health and the local medical societies as county boards of health. Alabama became the first State in the Union to place upon the organized medical profession full responsibility for the protection of the health of its people. Fundamentally, very few changes have been made since the original act was passed, except in titles.

(2) The State Board of Health and the County Boards of Health are in control of all health work. No town or city is permitted to operate its own health department, each county health department having full authority over public health matters in its jurisdiction. All public health personnel including the State Health Officer are selected for their scientific and not political attainments.

(3) In 1919 part-time health officers were abolished by an act of the Legislature, approved by your Association. Therefore, local health officers serve the city and county alike on a full-time basis, or not at all. This one act has had a tremendous influence on the development of the Alabama program.

(4) Alabama has one Medical Practice Act to cover all who wish to treat diseases of human beings.

(5) The first appropriation of \$3,000 per annum for public health work was made by your Legislature in 1879, and this has gradually increased each year from all sources until now it is estimated, for the fiscal year ending June 30, 1947, that approximately 3¼ million dollars are available, or over \$1.00 per capita.

In closing it is well to state that with your prestige, tradition and excellent record of accomplishments, the matter of salaries for public health workers continues to be of paramount importance in every State. Throughout the Nation community-wide intelligently-planned educational programs are being developed to educate the lay public concerning public health work.

Confidently I firmly believe and sincerely trust that Alabama, with its unparalleled

background, will not rest upon its laurels but will continue to push forward with enthusiasm and follow the leadership that has been established by your distinguished and unique Association.

I wish to pay tribute to my friend, Dr. Cannon, for his excellent service in connection with the history of the Alabama Medical organization and express to Dr. Grote my sincere appreciation for the invitation to be present at this time.

Infectious Hepatitis—The essentials of treatment may be simply stated: first and foremost, rest in bed; second, a high protein, high carbohydrate, low fat diet. Rest in bed is of paramount importance and should be continued through the duration of the jaundice and until all has disappeared. In average cases this will mean confinement for 3 to 5 weeks. We are firmly convinced that the one most important cause of relapse or delayed recovery is inadequate rest in bed.

The second essential is proper diet. Large series of cases present incontrovertible evidence that protein is as essential as carbohydrate for the protection and repair of the liver. An adequate diet for an adult should consist of about 200 grams of protein, 400 grams of carbohydrate, and 40 to 50 grams of fat daily.

When persistent vomiting is present, protein, carbohydrates, and fluids should be administered intravenously. We injected one or 2 units of blood plasma for each meal missed and in addition gave 500 cc. of 10 per cent glucose in normal saline to supply carbohydrates and fluids. Salt retention edema must be watched for. In desperately ill patients manifesting severe liver failure or with hemorrhagic manifestations, whole blood transfusions are of value.

Symptomatic treatment of dyspepsia and abdominal cramps may be provided by belladonna, carminatives, and alkalies by mouth. Morphine or barbiturates should be used with extreme caution.

A word may be timely regarding prophylactic measures other than those relating to sanitation. Considerable evidence has accumulated indicating that human gamma globulin, given intramuscularly in a dose of 5 to 10 cc., offers protection to exposed individuals. Its use might be indicated in institutions where an epidemic appears imminent. There is little evidence, however, that the course of hepatitis once established is altered by gamma globulin.

One of the most vexing problems in the management of a case of hepatitis center upon a choice of standards to be met before the patient is allowed to become ambulatory. . . Briefly, the following criteria seem to us to justify the termination of bed rest: normal or near normal icterus index, slight or no tenderness of the liver to fist percussion, return of liver to normal size, a return of a feeling of well being to the patient. —Pinckney et al., *Virginia M. Monthly*, October 1947.

DIAGNOSIS AND TREATMENT OF ADDISON'S DISEASE

ERNEST H. PLANCK, M D.

Anniston, Alabama

In 1855, Thomas Addison¹ first described this condition as follows: "The leading and characteristic features of the morbid state to which I would direct attention are anemia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change in the color of the skin... This disease makes its approach in so slow a manner that the patient can hardly fix a date to the earliest feeling of languor." Present day knowledge of this disease has been unable to add any significant fact to this classic description.

Since, as Addison states, the onset is slow and insidious in the majority of cases, we are inclined to ignore many of the early signs and symptoms. Few, if any, of us think of this disease until we see the characteristic brownish pigmentation of the face, the mucous membranes and the extremities of the patient who is by then far advanced in his illness.

It is true that most of these patients have passed the fourth decade of life, but this fact does not preclude the possibility that quite a number of cases may be discovered in younger people, if we search hard enough. Perhaps Addison's disease is much more prevalent than we now realize. Certainly it is reasonable to believe that there are cases existing which fall just below the level of clinical recognition. What of the many children who have recovered from meningococcal meningitis and yet never seem robust and vigorous again? Is it not possible that they could have had hemorrhage into the adrenals, destroying part of the cortex, yet not so pronounced as to be diagnosed as Waterhouse-Friderichsen syndrome? It is also entirely possible, in my opinion, that many of the vague complaints, the vasomotor instability and the despondency associated with and attributed to the menopause might respond in a very gratifying way to treatment with adrenal cortical extract.

Read before a meeting of the staff of Anniston Memorial Hospital, January 14, 1947.

1. Rowntree, L. G.: *The Cyclopedia of Medicine*, Vol. 1, page 141, 1935.

Many of our elderly patients, both men and women, present symptoms indicative of poorly functioning adrenals and these symptoms should not be called senility without adequate investigation.

The etiology of Addison's disease is somewhat obscure but it is thought that approximately 60% of all cases are the result of fibro-caseous tuberculosis involving the cortex of the glands. The tuberculosis originates in the lungs and is believed to be transmitted via the blood stream to the adrenal glands. About 16% of the cases result from primary atrophy of the cortices. Other causes are syphilis, tumor, amyloid degeneration, pyogenic infection and hemorrhage. An interesting illustration of the effect of septicemic hemorrhage into the cortex is the Waterhouse-Friderichsen syndrome, which is comparable to acute Addisonian crisis in almost every respect.

The pathology involved is a slow, progressive destruction of the cells of the cortex, thereby reducing the endocrine activity of this portion of the glands. The medulla is rarely involved in the destructive process but its involvement is not important since the medulla is not essential for life. The proper function of the cortex, however, is absolutely necessary if life is to be maintained. The cortex normally produces three hormones which are vitally important to life. They are as follows: (1) the hormone controlling the metabolism of salt; (2) the hormone which plays an important part in the metabolism of sugar; and (3) the hormone that controls the amount of protein that the body is allowed to utilize and store.

In Addison's disease the various distressing symptoms occur primarily as a result of lack of the salt metabolizing hormone. Sodium chloride is one of the most important minerals upon which our body depends for its vital functions; it is important in the maintenance of the acid-base balance of the body fluids, and since it is so closely connected with the base ratio it exerts a direct influence on the osmotic pressure in the circulatory system. Sodium chloride also plays

an important part through its relation with calcium and potassium in the function of the muscles. The metabolism of water is greatly influenced by the amount of sodium chloride in the body, as evidenced by the necessity for removal of sodium chloride from the diet in cases of edema. We also know that the presence of too much sodium chloride can cause damage, as in cases of nephritis, in which the damaged kidney can not eliminate the sodium.

On the basis of the pathology, the symptoms are easily understood. The anemia results from the faulty metabolism of protein and carbohydrate; the general languor and debility, together with the feeble heart action, result from the loss of the stimulating effect of the adrenal cortical secretions; and the irritability of the stomach and the intestinal tract are probably due to poor function of the smooth muscle resulting from an upset in the ratio of salt, calcium and potassium, very similar to the gastrointestinal disturbance found in cases of heat stroke where the loss of salt has been rapid and excessive.

When these symptoms are encountered, the diagnosis is readily verified. Usually, the systolic blood pressure will be between 90 and 100 mm. Most cases show an interesting variation of the systolic pressure, with the highest reading obtained when the patient is supine and the lowest obtained when standing. The blood sugar is often below normal levels. The urine chlorides are low or absent and the blood sodium chloride is always considerably below the average normal.

The treatment of Addison's disease is divided into two parts, namely, treatment of the crisis and daily maintenance when not in crisis. Since the crisis is simply a flare-up of the underlying condition, manifested by shock, nausea and vomiting, fever and severe, griping pains within the abdomen, treatment consists of massive doses of adrenal cortical extract in amounts ranging from 500 to 2500 units per 24 hours depending upon the severity of the symptoms. Immediate infusion of salt solution varying in strength from 0.85% to 5% and in amounts which depend upon the level of sodium chloride in the blood is frequently necessary. If the blood sugar is low, oral and intravenous sugar solutions are indicated. Other sup-

portive measures to combat shock and pain may be used as necessary.

Once the crisis has been controlled and the acute symptoms are no longer present it becomes necessary to determine the daily maintenance dose of adrenal cortical extract needed by the patient. Desoxycorticosterone acetate (Percorten) is the treatment of choice in chronic adrenal insufficiency,² because its long continued action is most helpful to both the patient and the physician. The use of sodium chloride, 3 to 6 grams daily, reduces the quantity of Percorten necessary to maintain the patient in good balance. The salt is usually given in the form of one gram enteric coated tablets at meal times.

Treatment of the chronic state is usually begun with the injection of 2.5 mg. of Percorten once daily and a one gram salt tablet three times daily. The weight, blood pressure and general condition are watched closely for three days. At the end of this time weight gain will be noticed if treatment is adequate. If there has been no weight gain, Percorten is increased to 3.5 or 4 mg. Any marked increase in the size of the heart³ or the appearance of edema should be followed, first, by reduction of sodium chloride dosage and, if necessary, by reduction of the amount of Percorten. Usually, as treatment is continued, the daily hormone requirement becomes less.

A diet high in protein, carbohydrate and potassium is essential to the patient under treatment with Percorten. Potassium is necessary⁴ in order to avoid cardiac complications and may have to be given orally in the form of potassium chloride. Sodium chloride requirements vary according to the activity of the patient and the loss of sodium chloride through the perspiration.

After the optimal daily dose of the hormone has been determined and the patient has been maintained satisfactorily for 2 to 3 months at his usual employment, the implantation of pellets of Percorten in the muscles may be considered. Each pellet contains 125 mg. of the hormone. The implanted pellet releases Percorten at a fairly

2. Thorn, G. W.: J. Mt. Sinai Hosp. 8: 1177, 1942.

3. McGavack, T. H.: Am. Heart J. 21: 1, 1941.

4. Wilder, R. N.: Proc. Staff Meet. Mayo Clinic 15: 367, 1940.

constant rate,⁵ about 0.3 mg. daily. This amount exerts a therapeutic effect equivalent to 0.5 mg. of Percorten in oil injected intramuscularly. Knowing the minimum daily requirements of the patient, the number of pellets to be implanted can now easily be ascertained. One implantation usually lasts from 9 to 12 months. Since the daily requirement of hormone usually decreases slightly under prolonged treatment, Soffer⁶ advises that at least one less pellet than

the required number be implanted. This precaution prevents overdosage.

Thorn⁷ has found that the infrascapular region is the most suitable site for the implantation of pellets, provided that strict asepsis is observed. In spite of all precautions, however, the pellets will be extruded in a small percentage of the cases thus treated.

Addison's disease can not be cured but early recognition and proper treatment can almost double the life expectancy of these unfortunate people.

5. Hays, W. H.; Oppenheimer, E.; Mathieson, D. R., and Lein, J.: *Fed. Proc.* 4: 123, 1945.

6. Soffer, L. J.; Engle, F. L., and Oppenheimer, B. S.: *J. A. M. A.* 115: 1860, 1940.

7. Thorn, G. W.; Koepf, G. F.; Lewis, R. A., and Olsen, E. F.: *J. Clin. Investigation* 19: 813, 1940.

HIDROSADENITIS SUPPURATIVA

REPORT OF TWO CHRONIC CASES TREATED BY SURGICAL EXCISION

ROBERT GEORGE GOODALL, M. D.

Chief Resident Surgeon

Jefferson-Hillman Hospital

Birmingham, Alabama

Hidrosadenitis suppurativa is a chronic inflammatory disease of the skin and subcutaneous tissue characterized by the formation of abscesses, sinuses and ulcerations. It involves selected sites of the cutaneous surface, such as the axillary, mammary, inguinal, genital and perianal regions. The disease may appear as a solitary abscess simulating a furuncle which subsides spontaneously or it may become very extensive and involve large areas of skin, requiring surgical excision and plastic repair. Although it is a common clinical entity it is seldom recognized as such and is frequently improperly treated. It is the purpose of this paper to discuss hidrosadenitis suppurativa in regard to etiology, histopathology, diagnosis and treatment, and to report two chronic cases which were cured by surgical excision.

Superficial abscesses involving the skin of the axillary, mammary and the perianal regions were described by Velpeau as early as 1839. He classified the disease by its distribution but made no association with its location in the sweat glands. However, Verneuil, a French surgeon, has generally

been given credit for the original description of the disease, and his name has frequently been affixed to the title. He suggested the association of the abscess with the sweat glands, merely on the basis of his clinical observation.

The French and German literature contains many reports from various authors of descriptions of this disease. The first article on the disease in American or English literature is the one by Lane, 1933, "Hidrosadenitis Axillaris of Verneuil," in which he states "The disease is not uncommon and it presents a definite clinical picture, but it is apparently not well known, probably because it is hardly mentioned in most works on surgery in the English language and is not mentioned, or is only briefly described, in many textbooks on dermatology." This article was a re'sume' of foreign literature and the author confined the discussion to hidrosadenitis of the axillae, as that was the only location in which he had seen it. He further added that he had only seen it in women.

Cole and Driver in 1918 and Carson and Knowles in 1935 presented patients before the dermatologic societies of Cleveland and Philadelphia, respectively. A comprehen-

From the Department of Surgery, Jefferson-Hillman Hospital.

sive report by Brunsting appeared in 1938. This report included the study of the clinical and pathologic features of the disease with 22 case reports and a résumé of the literature.

ETIOLOGY

The etiologic factors concerned in hidrosadenitis have remained obscure. It is an infectious disease associated with a variety of bacterial organisms. The most common are hemolytic streptococcus, staphylococcus aureus and streptococcus viridans. Trauma, due to the application of irritating deodorants, lotions and depilatory creams, and plucking or shaving of the hair of the axilla may play a role, but this is questionable.

HISTOPATHOLOGY

The essential glands of the skin are of two types: the sudoriferous glands and the sebaceous glands with their ducts. The sudoriferous are classified as the eccrine (sweat gland) and the apocrine (scent gland). The eccrine, or simple tubular sweat glands, are derived directly from the epidermis and are distributed over practically the entire cutaneous surface. The secretion of the eccrine gland is of known chemical composition. The apocrine glands are approximately 3 to 4 times larger than the eccrine glands and are situated at a greater depth in the skin. These modified "sweat glands" are the scent glands of the human, and appear in the axillary, inguinal, genital and perianal regions of both sexes, and the mammary region of the female. These glands function by rupturing of the cell membrane and evacuation of cellular protoplasm into ducts which open directly in hair follicles or on the epidermis adjacent to the follicle. The secretion has a decided odor and is of very complex chemical composition. Their origin is the hair follicle (anlage) and it usually does not become active until about the time of puberty. The apocrine glands in man are generally regarded as a vestigial remnant.

Hidrosadenitis suppurativa is a primary involvement of the apocrine glands and spreads throughout the subcutaneous tissue by means of the lymphatic channels. Ormsby and Montgomery state that "The earliest infiltrate is seen in the subcutis within the lumen of the gland and in adjacent periglandular connective tissue, thus suggesting that the infection enters by way of the hair

follicle and excretory tubules, but does not produce an inflammatory reaction until the gland proper is reached. The infection spreads by means of the lymph channels and lymph spaces which contain many leukocytes and often clumps of cocci. In many of the apocrine glands the lumen is distended with leukocytes. There is relatively little inflammation about the gland in some areas and marked inflammatory reaction without involvement of the walls of the gland in other areas. The infection spreads throughout the subcutaneous tissues and the eccrine sweat glands become similarly involved from without. Later, there is perivascular infiltrate of plasma cells and lymphocytes. In the late stages pale staining, irregular shaped cells with centrally placed nuclei are seen and represent the remains of epithelial cells which form a wall of a gland. Foreign body giant cells are frequently present. The upper parts of the cutis and epidermis only become involved after extensive destruction has occurred throughout the subcutaneous tissues. Eventual destruction of sweat glands ensues."

DIAGNOSIS

Hidrosadenitis suppurativa is essentially a disease of adult life, the majority of patients being in the second or third decade. Robust individuals who do not have any associated disturbances of general health are usually affected. The disease is confined to the locations of the apocrine glands. There may be mild systemic involvement. The presence of the disease is common in individuals who have a seborrheic type of skin and frequently an associated acne.

The onset of the disease is insidious, characterized by pruritis, burning and local hyperhidrosis. The early stage is characterized by the formation of a solitary abscess simulating a furuncle and not infrequently this may be the extent of the involvement. This early abscess may involute without drainage, but the more common clinical picture is that of a hard subcutaneous nodule that will remain perceptible for weeks. Suppuration is usually not apparent, and incision and drainage of the primary nodule may reveal only a drop of creamy pus, or there may be a total absence of drainage. In the mild form where only one or two abscesses are present the incision and

drainage will be sufficient and the wound will drain for several days and heal.

In the more advanced stage new nodules appear adjacent to the original lesions. These coalesce to form cord-like elevated bands which may be described as keloid fibrous bridges. There is an extension into deeper layers and extensive sinus tracts develop. Remission and relapse are common and prolonged. This undermining and burrowing into the subcutaneous tissue may be followed by suppuration and ulceration with inversion and undermining of the tissue. The borders of the ulcer become ragged and rolled. The drainage is persistent and has a very bad odor.

The differential diagnosis must be made between furuncle, carbuncle, erysipelas and lymphadenitis in the early stage. Scrofuloderma, nodulo-ulcerative syphilis, actinomycosis, tularemia and lymphopathia venerea or granuloma inguinale must be considered in the advanced stages of the disease. A study of the history, clinical observation, demonstration of the causative organisms, serologic testing, use of specific intradermal tests and biopsy usually will be sufficient to make a differential diagnosis.

TREATMENT

Treatment may be divided into conservative and radical forms of therapy. Each patient presents an individual problem and the choice of the method of treatment depends on the stage of the disease present when the patient first comes under observation.

In the early stages conservative treatment consisting of hot packs and incision and drainage of the early nodules will suffice. Incision and drainage may be necessary to relieve pain from local tension. Drainage may persist for one to two days and then cease. The nodule may not disappear for several weeks. After drainage has ceased the area should be frequently cleansed with soap and water, followed by alcohol sponging to prevent recurrence. The use of systemic penicillin and sulfonamides may be of value. In several early cases the author has felt that locally injected penicillin has helped to terminate the infection. Roentgen therapy has proven beneficial in the early stages of the disease.

When the disease is seen in the later stages, presenting a clinical picture of thickened elevated epithelial bridges, with

chronic sinuses and ulceration, the treatment of choice is surgical. A surgical excision of the whole involved area must be carried out and, if primary closure is not possible, plastic repair may be required.

CASE REPORTS

Case 1.—E.M., c.m., age 43. The first hospital admission was in June 1943 following a "stroke" with paralysis of the right arm and leg. The physical examination at that time revealed lesions of the right axilla and pubis characterized by elevated thickened, glistening epithelial bridges with draining sinuses discharging a thick, yellow, foul smelling pus. Each involved area measured about the size of the palm of the hand. These had been present for three years and the patient had been told it was due to syphilis. The Kline blood serologic test and the spinal fluid Wassermann reaction and colloidal gold reaction were negative at the time of his admission. He had been receiving antisyphilitic treatment consisting of bismuth and arsenic injections for 16 months prior to admission. Smears from the axilla and pubic regions were negative for tubercle bacilli and positive for gram positive cocci. The patient was discharged for convalescence at home.

He was readmitted three months later with a chief complaint of axillary and pubic sores, without improvement since his last admission. The laboratory findings were as follows: normal urinalysis, slight anemia and a normal total and differential white cell count; negative blood serologic test, spinal fluid Wassermann and colloidal gold reaction; three negative smears for acid fast bacilli and negative guinea pig inoculation; smears showed gram positive and negative rods and cocci; positive cultures for staphylococcus aureus; negative studies for actinomycosis; positive intradermal test with both Ducrey and Frei antigens. The patient was treated with sulfonamide therapy, baths and supportive therapy for one month without improvement. A complete and radical excision of the involved area of the right axilla and the suprapubic area was carried out. The pathological section revealed "diffuse chronic inflammation of the skin with chronic hidrosadenitis." After an unsuccessful attempt at skin grafting the patient was discharged with clean granulating wounds which had closed over one-half of the former site by secondary intention. Complete epithelization had taken place three months following excision. This patient has been followed in the Outpatient Clinic up to March 1947, and has had no recurrence of the infection.

Discussion: It is of interest to note that when this patient was admitted to the hospital for the first time the differential diagnosis lay between lymphadenitis, tuberculous lymphadenitis, lymphopathia venereum, actinomycosis, syphilitic ulcers, tularemia and granuloma inguinale. However, this disease was of three years duration when first seen, and, in the presence of pre-

vious antiluetic therapy and a positive intradermal test with Frei and Ducrey antigens, the picture was even more confusing.



Fig. 1 (a)—Right axilla. Photographs of lesions 4 weeks after radical excision showing clean wounds healing by secondary intention. Case 1.

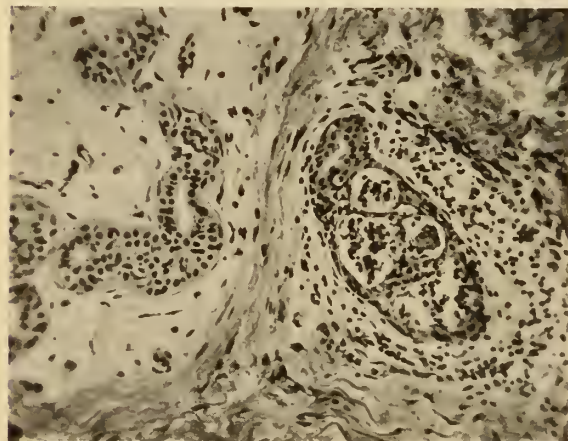


Fig. 2. Photomicrograph. Note inflammatory cells in and around apocrine gland. Case 1. X 252.

Case 2—F.W., w.m., age 30. The first hospital admission, November 1945, was due to a tender swelling in the right axilla. Three days before admission he had developed generalized malaise, chills and fever. Physical examination revealed a mass in the right axilla, a mild dermatitis of the face, neck and scalp, and injection of the con-



Fig. 1 (b)—Suprapubic. Case 1.

junctiva. The blood count was normal. Laboratory studies revealed a 2 plus albumen in the urinalysis, negative agglutinations for typhoid, negative blood cultures, negative fungi cultures from the axilla, negative smears of the purulent exudate for acid fast organisms, negative guinea pig inoculation for tuberculosis and two negative serologic tests. A biopsy was done three weeks after admission and was reported as acute and chronic lymphadenitis with necrosis. A draining sinus persisted for two months and was treated with penicillin soaks with slight improvement. Three months following his first admission a complete surgical excision of the involved area with primary closure was carried out. Although the pathological sections were somewhat confusing the final report was that "it seems most likely that it might be a secondary infection in connection with the hair follicles of the axillae." Sutures were removed on the 9th day. A clear serous drainage persisted for 3 weeks and the wound was completely healed six weeks after excision. There has been no recurrence of infection or drainage from the wound for a period of one year.

SUMMARY

Hidrosadenitis suppurativa has been discussed in regard to its etiology, histopathology, diagnosis and treatment. Two chronic cases are reported which were cured by surgical excision.

NOTE: Acknowledgment is made to Doctor Ray O. Noojin, Chief of Division of Dermatology

and Syphilology, Department of Medicine, Jefferson-Hillman Hospital, for the diagnosis and advice as to therapy in the above case reports.

REFERENCES

1. Brunsting, Henry A.: Proc. Staff Meet. Mayo Clinic 12: 752-754, 1937.
2. Idem: Arch. Dermat. & Syph. 39: 108-120, 1939.
3. Cole, H. N., and Driver, J.R.: Arch. Dermat. & Syph. 19: 310, 1929.
4. Carson, E. F., and Knowles, E. D.: Arch. Dermat. & Syph. 34: 346, 1936.
5. Lane, J. E.: Arch. Dermat. & Syph. 28: 609-613, 1933.
6. Macey, H. B.: Proc. Staff Meet. Mayo Clinic 16: 758-759, 1941.
7. Meleney, F. L., and Johnson, B. A.: Surgery 1: 169-221, 1937.
8. Ormsby, Oliver S.: Diseases of the Skin, Lea & Febiger, 1934, pp. 1103-1104.
9. Ormsby, Oliver S., and Montgomery, Hamilton: Diseases of the Skin, Lea & Febiger, 1943, pp. 1181-1182.
10. Sutton, Richard L, Jr., and Marks, Mark M.: J. A. M. A. 121: 1344-1347, 1943.
11. Velpeau: cited by Verneuil.
12. Verneuil, A.: Arch. gen de me'd. 94: 447-468; 693-705, 1854.
13. Idem: 114: 537-557, 1864.

ACUTE POSTPARTAL HEART FAILURE

A REPORT OF FOUR CASES WITH AN INQUIRY INTO PATHOGENESIS

ARTHUR M. FREEMAN, M. D.

Birmingham, Alabama

Heart failure appearing for the first time or recurring during the postpartal period is fortunately an unusual occurrence. The condition has received relatively little consideration in the literature and, as far as I am able to determine, no complete critical study.

During the past fifteen months I have had opportunity to observe four patients in whom congestive heart failure appeared suddenly and for the first time following delivery at term. In each instance the patient gave evidence of a normal heart before the last pregnancy.

CASE REPORTS

Case 1. E. C., a 36 year old Negro, para IV, gravida IV, entered the Norwood Hospital 60 days postpartum complaining of "swelling all over" and severe shortness of breath of one month's duration. During the last trimester of each previous pregnancy she had noticed some edema of the feet and ankles. Two months before term of the latest pregnancy she had noted slight exertional dyspnea. Her doctor found her blood pressure was normal. Delivery was accomplished without difficulty. She returned gradually to full activity one month postpartum at which time symptoms of edema and dyspnea became more severe. For the week preceding admission she experienced nocturnal dyspnea and orthopnea, cough and fever.

Examination revealed an acutely ill, edematous colored female of about 36, sitting upright in bed in marked respiratory distress. The blood pressure was 110/70, pulse rate 130 per minute. Neck veins were full. The mucous membranes were cyanotic. The optic fundi were normal, free of vascular change. The heart was greatly en-

larged to the left and right. The point of maximal impulse was in the sixth interspace in the midaxillary line. The heart sounds were rapid, regular and muffled with a presystolic gallop rhythm. No murmurs were present. There was dullness, with moist bubbling rales at both lung bases. The abdomen was slightly distended and a fluid wave was elicited. The liver edge was six centimeters below the costal margin and tender to palpation. Pitting edema of the lower legs was present.

The urinalysis revealed a specific gravity of 1.012 with a two plus albumin. Red and white cells with granular and hyaline casts were present. The hemoglobin was 55 per cent, red blood cell count 2,900,000, white blood cell count 7,500; 64 per cent were neutrophils and 36 per cent were lymphocytes. The sedimentation rate was 15 millimeters per hour. The blood Kahn was repeatedly 4-plus positive. Venous pressure was 250 millimeters of water. X-ray of the chest showed an enormously enlarged heart with the lung findings of passive congestion. The electrocardiogram was normal except for low voltage.

The patient was digitalized and the salt intake restricted. Aminophyllin, mercurial diuretics, and vitamins were given parenterally. After five days she had lost all edema and thirty pounds of weight. The urine had become clear. She was dismissed on a maintenance dose of digitalis. She returned one month later after having received rapid syphilotherapy, including 3,500,000 units of penicillin plus arsenic and bismuth. All her symptoms had disappeared. She was re-examined one year after the first admission during which time she had not taken digitalis. Her heart size was normal clinically and by x-ray. The electrocardiogram was normal. There were no cardiac symptoms or findings.

Case 2. C.C.J., a 22 year old para V, gravida V, was admitted to the Norwood Hospital

at term. During the last trimester of pregnancy she had noted edema and slight dyspnea. She was delivered of a normal infant, immediately following which she had an eclamptic convulsion. She was placed on the usual regimen for eclampsia, including hypertonic glucose intravenously and repeated blood transfusions. Following transfusion of 350 cubic centimeters of blood two days after delivery she developed severe dyspnea and cyanosis. The heart rate suddenly became extremely rapid.

Examination at this time revealed an acutely ill white female, lying semi-erect in considerable respiratory distress. The blood pressure was 140/116 and the pulse was not palpable. The skin was pale and slightly cyanotic. The fundi revealed slight sclerosis and narrowing. The neck veins were distended. There was marked generalized dependent subcutaneous edema. The heart was greatly enlarged although the borders were not distinct due to adhesive strapping of the breast. The rhythm was regular with a rate of 180 per minute which did not slow in response to vagal stimulation. A presystolic gallop rhythm was present. There were no murmurs. Pulsus alternans was marked. Moist rales were heard all over the lungs. Free fluid was present in the abdominal cavity. The liver edge was palpable 8 centimeters below the costal margin and was quite tender.

Urinalysis revealed 4 plus albumin with large numbers of red and white blood cells and casts. The specific gravity was 1.030. The hemoglobin was 61 per cent, with 3,210,000 red blood cells; 9,250 white blood cells per cubic millimeter were present with a normal differential. Nonprotein nitrogen was 43 milligrams per cent. The electrocardiogram revealed a sinus tachycardia, right axis deviation, with low and diphasic T-waves in all leads.

The patient was placed in an oxygen tent. Intravenous fluids were withheld and salt was restricted. Digitoxin was given in full doses immediately. Aminophyllin and mercurhydrin were administered parenterally. The patient improved in 24 hours but the tachycardia and gallop rhythm persisted. Gradually, the heart rate slowed and the patient lost edema and the signs of heart failure. Four days later she developed left femoral thrombophlebitis which was treated with elevation of the extremity and cold applications. Six days later (eight days after delivery) she suddenly lost consciousness and became cyanotic following use of the bedpan. The blood pressure fell to 80/60 and pulmonary embolism was suspected. Fortunately she survived this and was able to leave the hospital a few days afterwards. The heart rate, rhythm and blood pressure had returned to normal. She was reexamined two months after dismissal and found symptom free, with normal blood pressure, heart and urinary findings.

Case 3. A. B., a 26 year old white para I, gravida II, entered the Norwood Hospital at term complaining of shortness of breath and swelling. She had been hospitalized for abortion three years previously. Physical examination was

negative at that time. The present pregnancy had been under no active medical supervision. She had felt well until one month previously when she noticed swelling of the feet and ankles. Her blood pressure was found high at that time; she was placed on magnesium sulphate by mouth daily. She did not go to bed. For the week preceding admission she noticed progressive dyspnea, orthopnea and cough. She complained of headache and nausea, and vomited several times. Her diet was very poor.

Examination revealed an acutely ill, very pale white female sitting upright in considerable respiratory discomfort. The pulse rate was 140 and the blood pressure was 180/110. There was marked generalized dependent edema. The veins of the neck were quite distended. The fundi revealed moderate arterial narrowing and sclerosis with arteriovenous compression. The heart was enlarged on the left and right with the point of maximal impulse in the left midaxillary line in the 6th interspace. The rhythm was regular and free from gallop. No murmur was heard. Pulsus alternans was present part of the time. Moist rales were heard over both lungs inferiorly. The liver edge was palpable three centimeters below the costal margin and was quite tender.

Urinalysis revealed a specific gravity of 1.013 with one plus albuminuria. No cells or casts were present. The red blood cell count was 2,000,000, with a hemoglobin too low for accurate estimation. The white blood cell count was 12,450, with a normal differential. The nonprotein nitrogen level was 29 milligrams per cent, with a total plasma protein of 2.31 grams per cent. There was reversal of the albumin/globulin ratio. The Rh factor was negative. The electrocardiogram revealed sinus tachycardia. Q_1 was present, and low or diphasic. T-waves were present in all leads.

Plasma, blood, and protein hydrolysates were infused intravenously in an attempt to solve her protein deficiency and anemia. She was seen in consultation two days after admission at which time she evidenced acute congestive heart failure. She was placed in an oxygen tent. Intravenous fluids were discontinued and sodium was restricted. A full dose of digitoxin was given. Large doses of aminophyllin were injected at frequent intervals intramuscularly. The patient went into active labor a few hours later and delivered a live infant after a stormy course in the delivery room. Following delivery she remained in a critical condition with severe dyspnea and venous distension for 48 hours. Mercurhydrin was administered intramuscularly daily; thereafter her progress was rapid. She was dismissed 10 days after delivery, symptom free. Her heart rate and rhythm were normal and her blood pressure was 120/80. The continuance of a daily maintenance dose of digitalis was advised. She was reexamined six weeks after discharge from the hospital and found free of anemia and hypertension. Her heart and urine were normal.

Case 4. S. B., a 39 year old white para VII, gravida VII, was admitted three weeks post-

partum, complaining of shortness of breath, coughing up blood and swelling. Her previous pregnancies had been normal. Three months before term of the last pregnancy she had developed slight ankle edema. She had not noted dyspnea. She was under the care of her local doctor who stated that she was in good condition. Delivery was accomplished with ease and the patient felt well during the first week while she was in bed. Upon getting up she developed progressively severe symptoms of exertional dyspnea, generalized edema, orthopnea, and oliguria. She had been unable to sleep for the last five nights due to orthopnea, cough and hemoptysis. Her past history revealed a submarginal diet. There was no history of rheumatic fever, hypertension, syphilis or heart murmur.

Examination revealed a desperately ill, cyanotic, swollen, white female sitting upright in bed in severe respiratory distress coughing up bright red blood. The fundi showed hemorrhages and exudate bilaterally. Veins of the neck were distended. There was generalized anasarca and dependent edema. The heart was greatly enlarged to the left and right. Point of maximal impulse was in the sixth interspace in the anterior axillary line. The sounds were muffled and a gallop rhythm was prominent. The blood pressure was 170/115, with pulsus alternans. The heart rate was 164 per minute. No murmurs were present. Moist coarse rales were heard all over the lung fields with dullness at both bases. Free fluid was present in the abdomen.

Urinalysis was consistently entirely normal. The hemoglobin was 104 per cent with 5,150,000

red blood cells. There were 11,750 white blood cells with a normal differential. Kahn was negative. The nonprotein nitrogen was 29.3 milligrams per cent. Total proteins were 7.02 grams per cent with a normal albumin/globulin ratio. X-ray of the chest showed an enlarged heart with lung findings of congestive failure. An electrocardiogram showed low voltage and T-wave inversion in all leads. The venous pressure was 190 millimeters of water.

The patient was placed in oxygen promptly in Fowler's position; and 1.2 milligrams of digitoxin were administered orally. Aminophyllin, mercurhydrin, and vitamins were administered parenterally and the usual intensive cardiac program was carried out. Five hundred (500) cc. of clear fluid were aspirated from the left pleural cavity. Within one week the patient had greatly improved and was free from all demonstrable edema, having lost 35 pounds. Gallop rhythm and pulsus alternans had disappeared. She could lie quite comfortably flat in bed. The blood pressure had dropped to 120/80 and the venous pressure had fallen to 110 millimeters of water.

She was allowed to go home on a maintenance dose of digitalis, with the advice given patients with decompensated hearts.

DISCUSSION

These four patients (Table 1) are similar to a group reported by Hull and Hidden¹ from the Charity Hospital in New Orleans. They described eighty patients who developed heart failure during the early puerperi-

TABLE 1
SUMMARY OF FOUR CASES OF ACUTE POSTPARTAL HEART FAILURE

	Para	Duration of Symptoms	Days Post- partum	Significant Symptoms and Findings	Blood Pressure MM/Hg	Venous pressure MM/H ₂ O	X-Ray Findings	ECG	Significant Laboratory Findings
1. EC Negro Age 36	4	60	30	Dyspnea Orthopnea Edema Ascites Large heart Gallop rhythm	110/70	250 Veins distended	Large heart Fluid at lung bases	Low voltage	55% Hb. Kahn pos. Urine normal
2. CCJ White Age 22	5	3	2	Tachycardia Dyspnea Edema Liver enlarged Gallop rhythm	140/116 Pulsus alternans	Veins distended		Sinus tachy- cardia (168) R axis deviation Low T-waves	61% Hb. Cells, casts and albumin in urine
3. AB White Age 26	2	2	1	Anasarca Orthopnea Large heart	180/110 Pulsus alternans	Veins distended		Low and inverted T-waves	25% Hb. 2.31 total protein Urine normal
4. SB White Age 39	7	21	14	Orthopnea Anasarca Heart enlarged Gallop rhythm Hemoptysis Retinal hemorrhage	170/115 Pulsus alternans	200 Veins distended	Large heart Fluid at lung bases	Tachycardia (164) T-wave inversion all leads	Blood and urine normal

um; none of them gave evidence of previous heart disease. The authors were impressed by its frequency in Negroes, youth and previously nulliparous women. They emphasized the suddenness of onset, particularly just after the patient had arisen from child bed. The majority of cases experienced an almost explosive pulmonary edema, together with gallop rhythm, anasarca and low pulse pressure with an elevated diastolic pressure. A high percentage subsequently showed embolic phenomena. Only a few patients had received medical care during pregnancy. All appeared refractory to digitalis and other treatment commonly used in heart failure. Five came to autopsy. Focal areas of necrosis and leucocytic infiltration were found in the myocardium, with edema of the heart muscle. Hull believed that these cardiac lesions formed the background for heart failure which might be induced by sudden exertion or strain. Dietary deficiency in vitamins and proteins was suspected as possibly etiologic. In keeping with the rapid development of the syndrome there was rapid improvement once the patient had been sustained through the critical phase.

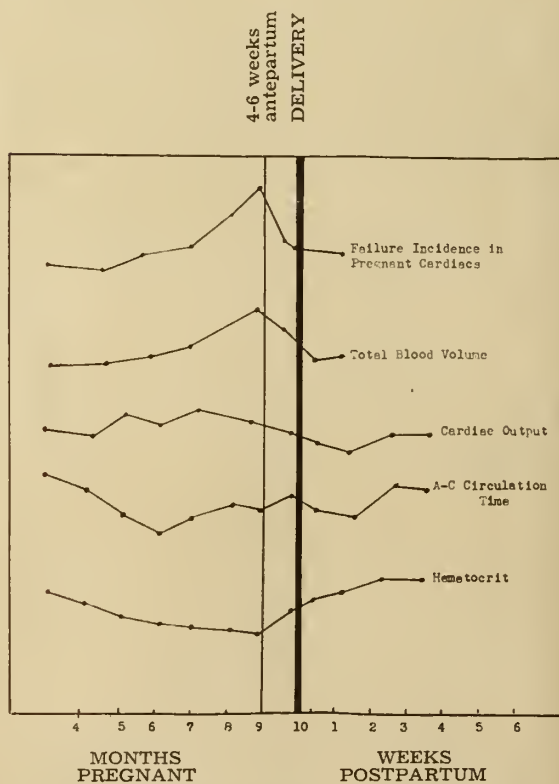
Musser² also reported similar clinical and pathological findings in postpartal congestive heart failure. In addition to the etiologic background cited by Hull he noted the frequent occurrence of puerperal sepsis in his patients.

Our experience has been similar in many respects to that reported by these authors. Our patients have responded very satisfactorily to digitalis preparations and the usual cardiac regimen, in contrast to the reports of Hull and Musser. In inquiring into the pathogenesis of the syndrome, I have considered two factors common to all cases: the obvious existence of pregnancy itself and the presence of preeclampsia. It is signifi-

cant that none of this group received adequate prenatal supervision.

The effect of pregnancy on the cardiovascular system is illustrated in Figure I.³ Beginning with the third month there is a steady increase in the blood volume, cardiac size, cardiac output, blood flow velocity, heart rate, and pulse pressure. There is a diminution of the hematocrit, the blood viscosity and the circulation time. The temperature and oxygen consumption are increased. These changes permit an enormously increased blood flow to the placenta. Burwell has pointed out that the development of the placental circulation resembles strongly the development of an arteriovenous fistula in its effect on the heart and the circulation.⁴

The load of pregnancy reaches its peak about four to six weeks before delivery and should not be important in causing heart failure in the puerperium.



(Cohen and Thompson, J. A. M. A.:

Vol. 112, 116 (1939)

Figure 1

1. Hull, Edgar, and Hidden, Eleanor: Postpartal Heart Failure, *South. M.J.* 31: 265, 1938.

2. Musser, John Hand, and Sodeman, Wm. A.: Heart Changes of Unusual Etiology in Pregnancy, *Tr. A. Am. Physicians* 54: 18, 1939.

Musser, John Hand; Sodeman, Wm. A., and Turner, R. H.: Heart Failure or Acute Nephritis with Onset About Three Weeks After Delivery, *Ann. Int. Med.* 12: 739, 1938.

3. Cohen, M. E., and Thompson, K. J.: Studies on the Circulation in Pregnancy, *J.A.M.A.* 112: 1556, 1939.

4. Burwell, C. S.: The Placenta as a Modified Arteriovenous Fistula Considered in Relation to the Circulatory Adjustments to Pregnancy, *Am. J. M. Sc.*, 195: 1, 1938.

Numerous authors have demonstrated histopathologic and electrocardiographic evidence of the effect of preeclampsia on the heart.^{5, 6} Normal myocardium has been obtained from women accidentally killed during pregnancy and compared to that found in patients dying in toxemia. The heart lesions of the latter resemble those of acute glomerulonephritis and consist of focal necroses, hemorrhage and leucocytic infiltration, with edema of the myocardium generally. The electrocardiogram usually reveals change in the S-T segments or T-waves indicating focal or general damage to the heart muscle.

Undoubtedly such lesions diminish the cardiac reserve and render the patient vulnerable to sudden vascular overload. Perhaps of equal importance to myocarditis is the increased vascular strain imposed by the altered circulatory dynamics of toxemia. Such a strain reaches a peak varying widely in severity and time of occurrence.

There are several concurrent factors which either contributed to or precipitated failure. Hypertension and tachycardia occurred singly or together in all patients. Anemia imposed a further strain by increasing the heart rate and work. Protein deficiency was instrumental in increasing the signs of heart failure in one case. This hypoproteinemia was a result of albuminuria

5. Teel, H. M.; Reed D. C., and Hertig, A. I.: Complications of Nonconvulsive Toxemia, Surg., Gynec. and Obst. 64: 39, 1937.

6. Gouley, B. A.; McMillan, T. M., and Bellet, S.: Idiopathic Myocardial Degeneration Associated with Pregnancy and Especially in the Puerperium, Am. J. Med. Sc. 194: 185, 1939.

rather than dietary inadequacy. The role of vitamin and protein deficiency is of doubtful etiologic importance in any of our cases. Untreated syphilis occurred in one patient. The fact that she improved so completely prior to antiluetic therapy eliminates its significance.

Precipitating factors which suddenly increase the work of the heart seem to have been present in all patients. The sudden strain of return to physical activity after bed rest appears operative in the first and fourth cases whereas intravenous fluids exerted the same effect in the second and third cases. (Table 2.)

I have shown that in each patient the diagnosis of heart failure has been definitely established by objective findings. Sudden collapse in the puerperium from a variety of causes is not uncommon, however, and one must differentiate air embolism, pulmonary embolism, massive collapse of the lung, postpartal hemorrhage and atelectasis, to mention only a few.

SUMMARY

Four cases of acute heart failure appearing during the puerperium have been presented. The primary cause appears to be diffuse and focal myocardial damage incident to toxemia of pregnancy. Several contributory and precipitating causes of failure have been identified. All patients in the report responded promptly and apparently completely to measures commonly employed in heart failure, thus indicating the reversibility of the syndrome.

2300 Highland Avenue.

TABLE 2. SUMMARY OF CAUSES OF POSTPARTUM HEART FAILURE

Patient	Background	Contributory	Precipitating
1. EC	1. Toxemia of pregnancy 2. Inadequate medical supervision of pregnancy	1. Anemia 2. Tachycardia 3. Dietary inadequacy ? 4. Syphilis ?	Return to activity after delivery
2. CCJ	1. Eclampsia 2. Inadequate antepartum medical care 3. Multiparity	1. Sudden tachycardia 2. Hypertension 3. Anemia	Intravenous fluids
3. AB	1. Preeclampsia 2. No antepartum medical care	1. Hypoproteinemia 2. Anemia 3. Dietary inadequacy ? 4. Hypertension	Intravenous fluids
4. SB	1. Toxemia 2. Inadequate antepartum medical care 3. Multiparity	1. Hypertension 2. Tachycardia 3. Dietary insufficiency ?	Sudden return to activity after delivery

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham

C. E. ABBOTT Tuscaloosa

JOHN L. BRANCH Montgomery

D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

November 1947

CANCER IN ALABAMA

Contributed by

Karl F. Kesmodel, M. D.
Chairman of the Association's
Committee on Cancer Control

Cancer is taking a terrific toll in Alabama. As Chairman of the Committee on Cancer Control of the State Medical Association, I wish to emphasize the fact that free treatment is available for medically indigent cancer patients. As is well known, only by early diagnosis and adequate treatment can the death rate from cancer be reduced.

Any patient needing assistance and unable to pay should be referred by his doctor to the County Health Department. There he will fill out a blank, which, after approval by the Welfare Department, will be sent to the Cancer Control Division of the State Health Department, Montgomery. However, the applicant does not need to be on welfare rolls to secure assistance. The application will be reviewed and, if approved, the patient will be notified to what clinic to report and on what day he is to appear. The doctors at the clinics, who give their services free of charge, will then give adequate diagnosis and treatment. There are two clinics in Birmingham, two in Montgomery and one in Mobile.

It is estimated that there are three living cancer cases for every cancer death, which would mean about 6600 living cancer cases in Alabama. Only by vigilance on the part of the family doctor can these individuals be reached before it is too late. It has been definitely shown in the last six years that patients appear for treatment earlier than at any previous time in medical history. The period of waiting can be further reduced if the family physician will see that the medically indigent patient avails himself of this opportunity for free treatment.

YOUR DIRECTORY INFORMATION CARD

Preparations are now being made to publish a new edition of the American Medical Directory. The last one was issued late in 1942, and since that time it has been impossible to publish another because of war-time restrictions and the shortage of paper and labor.

About November 15, a directory card will be mailed to every physician in the United States, its dependencies, and Canada, requesting information to be used in compiling the new Directory. Physicians receiving an information card should fill it out and return it promptly whether or not any change has occurred in any of the points on which information is requested. It is urged that they also fill out the right half of the card, which information will be used exclusively for statistical purposes. Even if a physician has sent in similar information recently, mail the card promptly to insure the accurate listing of his name and address. There is no charge for publishing the data nor are physicians obligated in any way.

The Directory is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, one may find dependable data concerning physicians, hospitals, medical organizations and activities. It provides full information on medical schools, specialization in the fields of medical practice, memberships in special medical societies, tabulation of medical journals and libraries, and, indeed, practically every important fact concerning the medical profession in which anyone might possibly be interested.

Therefore, should any physician fail to receive one of these directory information cards by December 1, he should write at once to the Directory Department, American Medical Association, 535 N. Dearborn Street, Chicago, requesting a duplicate card.

VASCULAR DAMAGE IN DIABETES

"The discovery of insulin twenty-five years ago served to avert the catastrophic threat to life represented by diabetes mellitus but unfortunately initiated an attitude of complacency in the members of the medical profession. What was intended as a palliative became the panacea; control of the blood sugar level was interpreted as control of the disease. But 'maintenance of life is not sufficient in itself as a goal in the treatment of diabetes mellitus.' The optimism of that early period is now being dissipated by a number of anxious reports on the mounting incidence of seemingly inevitable degenerative sequelae. Rosenbusch has concluded a painstakingly thorough study of 88 diabetic children with the following—'The prognosis of diabetes in childhood—taking a long view—is in spite of the progress of dietary and insulin treatment more adverse than had originally been expected.' Joslin has found evidence of vascular damage in 70 per cent of 250 juvenile patients despite twenty years of treatment. Wager's most recent survey from the Mayo Clinic recognizes the seriousness of 'the steadily increasing frequency of retinopathy, especially in the younger age groups.'"

Thus does Dolger¹ open his discussion of this subject. The New York observer made a study of two hundred patients in whom the onset of diabetes occurred before the age of 50, either in childhood, adolescence or adulthood. He found that, even though the patients were most cooperative and were carefully and frequently examined and treated by highly competent physicians, evidences of vascular degeneration appeared both often and early. In general, retinal hemorrhages began to be noticed after the disease had existed from about ten to thirteen years, though of course there was much variation in the date of their appearance. "By the time retinopathy had developed 50

per cent of patients presented definite hypertension and 30 per cent albuminuria."

"The appearance of retinal hemorrhage often presaged the inevitable pattern of more generalized and progressive vascular degeneration. The rate of progression had no relation to the severity of diabetes or its control. The hemorrhages often resolved spontaneously, thereby making the effect of any specific therapeutic measures difficult to evaluate... On the other hand, without apparent reason, the sudden appearance of retinal hemorrhages not infrequently progressed to blindness within a year..."

"Twenty-seven patients of the total group of 200 became partially or totally blind."

The New York clinician goes on to tell us that "duration of the diabetes is a much more important factor than is the age of the patient. The glycosuria of patients in the three older groups was well controlled by insulin and diet or by diet alone."

And "the most significant deduction to be drawn from this study is that the duration of diabetes mellitus rather than the method of treatment is the most important factor in the development of degenerative changes. 'It makes little difference how the diabetic is treated, if he lives long enough, he will develop one or another form of vascular disease.' ... In 1930 Warren claimed never to have seen an autopsy of 'a diabetic, whose disease lasted five years or more, free from arteriosclerosis, regardless of age.' ... Priscilla White admits 'the incidence of degenerative complications in juvenile diabetes far exceeds expectation... Arteriosclerosis appears inevitable.'"

"The more obvious carbohydrate disturbance of what is commonly termed diabetes mellitus has overshadowed the generalized nature of the disease, the etiology of which is still unknown. The concept of vascular damage as a complication of diabetes must be amended in the light of all current observations; it is to be recognized rather as an integral manifestation of the basic disorder."

We read that the diabetic has an inherent weakness affecting both the insulin-producing tissues and the vascular system "with a common mechanism for the production of arteriosclerosis, retinopathy and neuropathy on the basis of involvement of the nutrient vessels to these structures. The diabetic patient provides unique material for the study

1. Dolger, Henry: Clinical Evaluation of Vascular Damage in Diabetes Mellitus, J. A. M. A. 134: 1289 (Aug. 16) 1947.

of the phenomena of aging and associated degenerative diseases since it has been demonstrated that diabetes represents an acceleration of these processes."

Dolger has indeed rendered a service in stressing the unpleasant facts that vascular degeneration in diabetics is not only more frequent than is generally realized, but also that it comes on earlier than we formerly thought and, worst of all, that it is apparently inevitable.

No one will underrate insulin. Indeed only the diabetic patients themselves and doctors with more than twenty-five years of practice behind them are in a position to appreciate in full the wonders daily being brought about by the judicious use of insulin. But, unfortunately, as proficiency in the employment of insulin increased and as miracle followed miracle, a certain amount of complacency did spread throughout the profession, as Dolger well says. And only within the last few years have we begun to ascertain the real facts and to divest ourselves of our false optimism. It is only reasonable to expect that other reports similar to Dolger's will appear from time to time. And diabetes mellitus, now so commonplace among us, will continue to be the subject of both extensive and intensive study and research. Already alloxan diabetes is receiving attention and as to what may result from this line of inquiry no one can as yet say.

PHARMACEUTICAL NEWS

Contributed by

The Alabama Pharmaceutical Association

We present herewith a brief introduction of the new United States Pharmacopoeia XIII and the National Formulary VIII.

Both of these official volumes, recently off the press, are fully up to the high standard of earlier issues. As is well known, U. S. P. XIII is issued under the authority of the United States Pharmacopoeial Convention, prepared by the Committee of Revision and published by the Board of Trustees. National Formulary VIII is issued under the authority of the American Pharmaceutical Association.

The most striking innovation in these recent issues is a rearrangement of the monographs so that a drug, or chemical, and pre-

parations made from it are placed in sequence instead of segregating preparations under a specific classification; for example, following the digitalis monograph there come those for digitalis capsules, digitalis injection, powdered digitalis tablets, digitalis tincture, digitoxin, digitoxin injection, digitoxin tablets, digoxin, digoxin injection, and digoxin tablets. This arrangement, which is common to both volumes, will be a little confusing at first to those who have become accustomed to the older classification.

Another new feature is that English titles are given first in bold type, followed by the full Latin title, abbreviated Latin title and, where sufficiently used, a synonym.

New admissions to the U. S. P. number about 95; deletions are 110; official English titles have been somewhat changed for 25 items and changes in Latin titles for 21.

For N. F. VIII, new items, together with those dropped from U. S. P. XII and included here, number 184; deletions are 175 and 4 changes of official title each for English and Latin names. Eighty-one monographs are for substances new in N. F. VIII and not taken over from U. S. P. XII, and those taken over from U. S. F. XII are 102.

New Admissions: In the front section of the Pharmacopoeia will be found the list of 95 new substances added in the Thirteenth Revision. Many important new drugs and their preparations are included.

Since both the U. S. P. and N. F. standards are recognized officially by the Food, Drug and Cosmetic Administration, they become governmental standards also. The changing picture of medication is indicated by the following partial list of types of forms of remedial agents in U. S. P. XIII:

	Number	New
Antitoxins	10	4
Capsules	1	—
Dental cones	1	—
Hormones	—	5
Injections	43	17
Lotions	—	2
Magmas	2	1
Ointments	26	4
Pills	—	1
Solutions	30	4
Tablets	66	9
Toxoids	6	2
Toxins	—	2
Troches	—	1
Vaccines	8	4

Injections: The general article on parenteral solutions will also be found among the general standards in the Pharmacopoeia. It starts on page 664 and indicates many specific requirements for these important forms of medication.

It should be noted that among the older iodine preparations, Lugol's solution and tincture of iodine are the only fluids of iodine in the U. S. P., and the latter is of 2% strength. The tincture of iodine of earlier editions contained 7% iodine but this has been transferred to N. F. VIII and entitled strong iodine tincture. Experience has shown that the 2% tincture has all the bactericidal value necessary and without the sting or destruction of normal cells.

Among the N. F. VIII classified preparations there are: ampuls 6; capsules 9; cerates 1; sun cream 1; elixirs 2; emulsions 2; extracts 3; fluidextracts 2; jelly 1; mass 1; ointments 2; pills 1; plaster 1; powders 3; solutions 3; spirits 5; syrups 2; tablets 20; tinctures 4; and wine 1.

There are roughly 184 new N. F. VIII monographs, of which about 100 have been taken from deletions of U. S. P. XII; therefore, there are 81 items new to N. F. VIII and not previously in U. S. P. XII.

Deletions from N. F. VII are 175; these again being indicative of the changing methods of medication; e.g.,

Elixirs	14	deleted
Extracts	5	deleted
Fluidextracts	38	deleted
Glycerites	3	deleted
Pills	4	deleted
Artificial salts	9	deleted
Tinctures	21	deleted
Ointments	3	deleted

In N. F. VIII approximately 117 pages are devoted to formulas for reagents and preparations used in chemical and bacteriologic diagnosis tests. This section is particularly valuable to the technician and to pharmacists who furnish materials to clinical laboratories, hospitals, etc.

It is strongly urged that physicians and pharmacists alike have both of these volumes in their libraries as must additions; in fact the law in many states requires that the latest editions of both the Pharmacopoeia and National Formulary be in the pharmacy to pass satisfactory inspection by the Board of Pharmacy representative.

Many physicians depend upon the list of drugs and preparations in the U. S. P. and N. F. as an aid in planning their medication. Your pharmacist can prepare many preparations from the U. S. Pharmacopoeia and the National Formulary at a considerable saving to your patients.

UROLOGY AWARD

The American Urological Association offers an annual award of \$1000.00 (first prize of \$500.00, second prize \$300.00 and third prize \$200.00) for essays on the result of some clinical or laboratory research in urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Statler, Boston, Massachusetts, May 17-20, 1948.

For full particulars write the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee. Essays must be in his hands before March 1, 1948.

MATERNAL INFECTIONS AND CONGENITAL MALFORMATIONS

In an effort to collect more precise data on the relationships between certain maternal infections and congenital malformations, a nation-wide study is being sponsored by the American Academy of Pediatrics and the National Society for the Prevention of Blindness. Questionnaires are being sent to obstetricians, ophthalmologists and pediatricians, seeking the reporting of cases of German measles in expectant mothers and of children with congenital defects that might be attributed to other infections in the expectant mother, such as measles, chicken-pox, mumps and influenza.

Although an association has been established between the occurrence of German measles early in pregnancy and certain congenital defects in the offspring, information is lacking as to the frequency with which this happens and as to the possible influence of other communicable diseases that might have been contracted by the expectant mother.

Data will be studied by the following committee: Herbert C. Miller, M.D., Professor of Pediatrics, University of Kansas Hospitals, Kansas City, Kansas; Stewart Clifford, M.D., and Clement A. Smith, M.D., both of Boston, Mass.; Josef Warkany, M.D., of Cincinnati, Ohio; James Wilson, M.D., of Ann Arbor, Mich.; and Herman Yannet, M.D., of Southbury, Conn. Physicians knowing of cases are urged to register them with Dr. Miller, chairman of the committee.

AMERICAN ACADEMY OF ALLERGY

The American Academy of Allergy will hold its annual convention at Hotel Jefferson, St. Louis, Missouri, December 15-17 inclusive. All physicians interested in allergic problems are cordially invited to attend the sessions as guests of the Academy by registering without payment of fee. The program, the scientific, and technical exhibits have been arranged to cover a wide variety of conditions where allergic factors may be important. Papers will be presented dealing with the latest methods of diagnosis and treatment as well as the results of investigation and research. Round table conferences will be held on Monday afternoon, December 15, 1947. Advance copies of the program may be obtained by writing to the Chairman on Arrangements, Charles H. Eyermann, M. D., 634 North Grand Boulevard, St. Louis, Missouri.

VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Toronto, Canada, May 6th, 7th, 8th, 1948, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a type-written double spaced copy sent to the corresponding secretary, Dr. T. C. Davison, 207 Doctors Building, Atlanta 3, Georgia not later than February 1st, 1948. The committee, who will review the manuscripts, is

composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The American Board of Obstetrics and Gynecology announces that the next written examination (Part I) for all candidates will be held in various cities of the United States and Canada on Friday, February 6, 1948 at 2:00 P.M. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year.

A number of changes in Board regulations and requirements were put into effect at the last annual meeting of the Board held in Pittsburgh, Pennsylvania, from June 1 to June 7, 1947. Among these is the new ruling that the Board does not subscribe to any hospital or medical school rule that certification is to be required for medical appointments in ranks lower than chief or senior staff of hospitals, or associate professorship in schools of medicine, for the obvious reason that such appointments constitute desirable specialist training. At this meeting the Board also ruled that credit for graduate courses in the basic sciences which involve laboratory and didactic teaching rather than clinical experience or opportunities will be given credit for the time spent up to a maximum period of not more than six months regardless of the duration of the course.

For further information address Paul Titus, M.D., Secretary, 1015 Highland Building, Pittsburgh 6.

1948 MEETING OF THE ASSOCIATION

ADMIRAL SEMMES HOTEL

MOBILE

APRIL 15, 16, 17

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

THE CAUSES OF THE NURSING CRISIS

Speaking for its 155,000 registered professional nurse members, the American Nurses' Association has issued a statement to the public on the critical situation in nursing facing the American people. The statement was issued from the national headquarters office, 1790 Broadway, through the Association's executive secretary, Ella Best. The statement declared that "the public must be roused to a clearer understanding of the present crisis in nursing if the situation is to be met and the health of the American people is to remain safeguarded."

The statement analyzed the underlying problems in the present nursing crisis and outlined a three-point program by the Association designed to aid in enlisting the cooperation of other groups to help solve the problems. The ANA's statement also revealed that Katharine J. Densford, the Association's national president, will conduct a nation-wide roll-call from Minneapolis by telephone calling on the presidents of the professional nurses' associations of the forty-eight states, the District of Columbia, Puerto Rico and Hawaii, to pledge their support in the fight to help solve the problem. The statement said the American Nurses' Association had appropriated funds for the activity, had appointed a public relations committee with Harriet Stambach, R. N., as chairman and had retained Edward L. Bernays, counsel on public relations.

Pointing out that the demand for nurses has skyrocketed in the last few years, both during and since World War II, the ANA statement indicated that a number of factors are not only deterring would-be nurses from joining the profession but are discouraging many nurses who are already registered, from continuing their professional activity.

These factors were defined as:

1. Inadequate economic security and unsatisfactory conditions of employment.
2. Lack of adequate legal control of nursing by the states.

3. Faulty distribution of nursing service.

Economic Security: On economic security, the ANA statement described the economic status of nurses since 1873 when nursing schools were first established in the United States.

"Long hours, split shifts, lack of retirement provisions and minimum salary increases have characterized the nurses' working conditions," it declared, "while, at the same time, the responsibilities of nurses have greatly increased, thus requiring higher standards of education and performance. The average requirement for professional nurse preparation is a high school diploma plus three years of nursing school education. According to U. S. Department of Labor statistics for October 1946, the average cash salaries for nurses in all fields, with the majority providing their own living quarters, amounts to \$170 to \$175 per month. One out of every four nurses receives less than \$145 per month. The vast majority of nurses work a 48-hour week, while a great many, owing to increased patient loads, still work as many as 54 or more hours a week."

The American Nurses' Association has encouraged state nurses' associations to undertake to act as the duly authorized representatives of professional nurses in all matters affecting their economic status including collective bargaining. The ANA appeals to the public to accept its responsibility of helping the profession to bring about reforms in providing economic security which are as vital to the public welfare as they are to the individual nurse.

Inadequate Legal Control: On legal control, the ANA statement said that at the present time there is wide variation in the standards for accredited schools of nursing and for registration of professional nurses in the several states. The first registration law was enacted in 1903 and since that time forty-eight states, the District of Columbia, Alaska, Hawaii and Puerto Rico have passed laws providing standards for the registration of professional nurses. Only twenty-six states and Hawaii and Puerto Rico now have laws providing licensure for practical

nurses. Only two states have laws requiring licensure of all who nurse for hire. Without such laws in all states the public is at the mercy of many unqualified and unlicensed persons.

According to the ANA's statement, in spite of the large number of nurses graduated from the 1,250 state accredited schools of nursing, many factors have combined to create unprecedented demands for additional nursing service. Some of these are the increased public interest in health care, the development of Blue Cross hospital plans, increased hospital construction, Federal social legislation, and improved health education. The exploitation of student nurses by many hospitals has been a deterring factor in the effort made by the profession to provide an adequate supply of qualified nurses. Too many hospitals, in order to obtain an inexpensive supply of nursing service, have developed schools of nursing but have sacrificed the educational needs of students to their own needs for nursing service.

In the public interest the ANA stands for control by law of nursing practice, both professional and practical.

Faulty Distribution: On distribution of nurses, it was stated that the ANA stands for nursing service equally available to all who need nursing care, regardless of economic status, in both rural and urban areas.

Nurses, like all other professional groups, tend to concentrate in metropolitan areas where research and educational facilities are available, where a more satisfying social life is possible, and where economic conditions are more favorable.

The ANA, with the cooperation of the state nurses' associations, has organized a non-profit, nation-wide counseling and placement service available without charge to nurses and employers alike. This activity is designed to promote a more equitable distribution of nursing service. Miss Densford, in her telephone roll-call, will set in motion programs aimed to further expand and strengthen this activity.

"No one solution, pat plan, panacea will cure the situation. Many groups—law-makers, hospital administrators and trustees, government officials, physicians, social welfare groups and the nurses themselves—must work together to solve the vital problems which are of such great concern to the

health of the American people.

"The American Nurses' Association, with all its resources, pledges itself to work to the limit in initiating and furthering activities to cope with this situation. The Association is cooperating with committees from other social groups so that they too may recognize the problems and assist in meeting them.

"The increased demand for registered professional nurses by the American public must be met. If the public has a clear recognition of the problem, it will be better able to help in the solution and will then be assured of the nursing care, of the quality and quantity, to which it is entitled. However, nursing must be made competitive with other careers if it is to attract young women today. Adequate economic security must be assured to nurses. Hospitals must not be permitted to exploit nurses. Legislation must be put on the statute books in every state which will provide for high standards in nursing education and nurse licensure to the end that the public will receive only the highest quality of nursing service.

"If the right kind of women are to come into nursing in the number that the public demands and that the public health requires, these conditions must be met. The American Nurses' Association pledges itself to do all in its power to bring this about."

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS
1947

	July	Aug.	E. E.* Aug.
Typhoid	7	6	32
Typhus	22	27	63
Malaria	538	289	803
Smallpox	0	0	0
Measles	129	37	37
Scarlet fever	9	8	50
Whooping cough	231	130	110
Diphtheria	7	14	48
Influenza	82	23	50
Mumps	29	20	27
Poliomyelitis	1	10	16
Encephalitis	0	1	0
Chickenpox	18	2	4
Tetanus	3	5	4
Tuberculosis	223	270	255
Pellagra	0	2	10
Meningitis	11	7	7
Pneumonia	90	67	129
Syphilis	1319	1947	1464
Chancroid	22	13	12
Gonorrhea	740	862	566
Tularemia	2	0	1
Undulant fever	19	10	9
Amebic dysentery	1	1	0
Cancer	261	363	0
Rabies—Human Cases	0	0	0
Positive animal heads	37	26	0

As reported by physicians and including deaths not reported as cases.

*E.E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND
DEATHS FROM CERTAIN IMPORTANT CAUSES
FOR JUNE 1947, AND COMPARATIVE RATES
FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During June 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	6703	**	**	27.2	22.2	22.5
Stillbirths	188	**	**	27.3	31.7	28.5
Deaths exclusive of stillbirths	2088	1232	856	8.5	8.3	7.4
Infant deaths:						
Under one year	265	162	103	39.5	40.1	39.3
Under one month	195	127	68	29.1	31.7	25.1
Typhoid and paratyphoid 1, 2					0.4	0.8
Epidemic cerebrospinal meningitis 6	3	1	2	1.2	1.2	2.0
Whooping cough 9	11	2	9	4.5	1.6	4.5
Diphtheria 10					0.4	
Tuberculosis, all forms 13-22	99	56	43	40.1	31.6	42.6
Malaria 28	3		3	1.2	2.0	1.6
Syphilis 30	28	6	22	11.3	8.5	12.7
Influenza 33	11	7	4	4.5	3.6	3.3
Measles 35	6	4	2	2.4	2.0	
Poliomyelitis 36	1	1		0.4	0.8	0.4
Encephalitis 37	1	1		0.4	0.4	0.8
Typhus fever 39	2	1	1	0.8	1.2	0.8
Cancer, all forms 45-55	204	145	59	82.7	77.4	66.3
Diabetes mellitus 61	28	17	11	11.3	8.9	9.0
Pellagra 69	6	3	3	2.4	2.8	2.5
Alcoholism 77	2	1	1	0.8	1.6	1.6
Intracranial lesions 83	212	124	88	85.9	81.0	74.9
Diseases of the heart 90-95	455	304	151	184.4	183.6	145.3
Disease of the arteries 96-99	19	12	7	7.7	8.1	9.8
Bronchitis 106	5	5		2.0	2.0	0.4
Pneumonia, all forms 107-109	62	28	34	25.1	27.2	25.0
Diarrhea and enteritis (under 2 years) 119	6	4	2	2.4	6.1	9.8
Diarrhea and enteritis (2 and over) 120	3		3	1.2	3.6	0.4
Appendicitis 121	6	3	3	2.4	3.6	8.6
Hernia and intestinal obstruction 122	18	9	9	7.3	8.9	7.8
Cirrhosis of the liver 124	11	7	4	4.5	3.6	2.5
Nephritis, all forms 130-132	141	81	60	57.1	62.2	58.1
Diseases of puerperal state 140-150	19	6	13	27.6	15.9	21.2
Puerperal septicemia 140, 142a, 147	2	2		2.9	3.5	7.1
Suicide 163-164	9	8	1	3.6	10.1	3.7
Homicide 165-168	37	13	24	15.0	14.6	7.8
Accidents, all types 169-195	154	103	51	62.4	70.1	60.6
Motor vehicle accidents 170	43	32	11	17.4	23.1	14.7
All other known causes	366	239	127	148.3	143.9	108.5
Ill-defined and unknown causes 199-200	160	41	119	64.8	53.9	58.5

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths): from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the June report of the years specified.

**Not available.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

THE TYPHUS FEVER CONTROL PROGRAM

DDT RESIDUAL DUSTING, RAT PROOFING AND
RAT EXTERMINATION

Contributed by

J. P. Gilbert
Senior Sanitary Engineer

Typhus fever (Brill's disease) was first recognized in Alabama in 1922. Epidemiological studies made during that period and confirmed by later investigations indicate that the rat and the rat flea are responsible for the spread of the disease.

From 1922 to 1932 typhus cases continued to be reported in Alabama, with an average of 60 to 80 cases being recognized each year. In 1932 there was a very sharp increase in the incidence, with 237 cases being reported. This increase continued the following year when the disease reached such proportions (823 cases) as to become a serious public health problem. Rat control programs, consisting of trapping or poisoning, or a combination of both, were begun in 1933. This control work was carried on mainly in towns within the area where the disease was most prevalent.

Following these control efforts, a more widespread program was made possible by the Civil Works Administration. More than three-quarter million premises were poisoned and trapped. This state-wide program reduced the rat population materially, and the number of cases reported for 1934 dropped to 271.

There has been a continuous increase in the number of cases reported annually since 1934 and each year has shown a wider distribution of the disease. By 1939, a total of 472 cases were recorded from 41 counties reporting that year. In 1944, a total of 890 cases were reported from 46 counties, this figure exceeding the previous peak year, 1933, by 57 cases. The heaviest incidence of the disease, as in former years, was reported from the southern section of the state. Mobile and Houston counties had all time high records for the year.

During the year 1945, federal funds were made available for typhus fever control activities in nine southeastern states. The allocation of this fund to the health departments of the various states was based upon

an analysis of the number of reported cases of typhus fever by counties for the period 1940 to 1944, inclusive. The thirteen counties in Alabama receiving approval for typhus control operation were Barbour, Calhoun, Coffee, Covington, Crenshaw, Dale, Dallas, Geneva, Houston, Jefferson, Mobile, Montgomery and Pike. Later, 5 additional counties, Escambia, Hale, Henry, Talladega and Autauga, were included.

DDT (dichloro-diphenyl-trichloroethane) powder, used experimentally for rodent ectoparasite control, was made available to all county projects approved for operation. The initial objective of residual dusting with DDT was the ultimate control of human typhus cases by controlling the various rat ectoparasites, particularly *Xenopsylla cheopis*, the Indian rat flea. This material, in a 10% dust, was applied to rat runs, entrances, harborages, burrows, and other places showing rat infestation. In connection with the application of 10% DDT dust as a pulicide, rat extermination measures were carried out to reduce the rat infestation. Materials used for this activity included red squill bait, arsenic water, and calcium cyanide gas; the latter being used to kill the rodents in their burrows and harborages.

In the early phases of the program, operations were carried out in selected areas of the various counties where a past history of typhus cases indicated the greatest need for control work. The program was later expanded where the participating counties appropriated additional funds to supplement federal and state expenditures. Some of the counties are now operating on a county-wide basis and others are covering the majority of the beats within the county. Both residential and business establishments are inspected for signs of rat infestation and treated where the need is indicated. Two complete coverages of all premises are made during the operational period starting in March and extending to October. In connection with the program, trapping operations are carried on to obtain entomologic data for an appraisal of the program. Live rats are brought in and combed for ectoparasite identification, and blood is obtained for the complement fixation test for typhus antibodies.

Rat proofing and rat eradication programs in business establishments have been carried on in the cities of Dothan, Mobile, Anniston, Brewton and Eufaula. Rat proofing is a relatively inexpensive method of construction designed to keep rats from entering buildings and to limit their travel from establishment to establishment as much as is feasible. It includes the closing or protecting, with rat proof materials, of all exterior actual and potential rat entrances, together with such interior rat stoppage, harborage removal, and clean up as may be necessary to reduce or eliminate rat breeding and feeding places. Following completion of rat proofing and the elimination of all rats within a rat proofed building, continuous inspection and maintenance are necessary to see that the buildings remain rat proof.

Tabulated reports of activities in the thirteen counties included in the DDT dusting and rat extermination program for the fiscal year June 1946 to July 1947 show a total of 78,649 premises inspected, 58,199 premises treated, 205,786 pounds of DDT applied, 44,396 pounds of poisoned bait placed, 2,595 gallons of arsenic water distributed and 7,177 pounds of calcium cyanide gas used. A total of 46,908 man-hours of supervision and labor were furnished through the U. S. Public Health Service and 46,477 man-hours furnished by the participating counties. For the same period, reports of the rat proofing programs in the cities of Mobile, Anniston and Eufaula show 1,431 buildings found infested, 499 buildings rat-stopped, and total funds of \$37,072.88 received for local participation.

Field observations and reports indicate a considerable reduction in the degree of rat infestation at premises treated in connection with the typhus control program. The program was well received by the people and the degree of success obtained was further attested to by the ready response of the county governing bodies in appropriating funds to participate in the continuation of the program.

Although there has been a reduction in the number of cases of typhus fever reported from the counties included in the program and a reduction in the amount of rat infestation, it is too early to evaluate the effect of the program definitely.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

December 1947

No. 6

COLOSTOMY

J. G. VANCE, M. D.

Birmingham, Alabama

My only excuse for preparing a paper of this character is that the patient with a colostomy feels stranded, and his surgeon tells him to learn the best way he can just how to use it; and so I am giving you my five years' personal experience with a colostomy.

The individual with a colostomy should not think of himself as a sufferer, but as a soldier; one who has been given a new lease on life by his surgeon, and whether a complete or radical operation has been done, or whether an emergency colostomy has been performed, in either event life holds much for that individual in length of time; and this can be happier, and life can be much more livable if the mental state is one of thankfulness to surgical skill, rather than one of fear.

The patient must be made to realize that there is a short circuit, or a shortening of the intestinal tract, with less control of the bowel movements, with a colostomy than when an individual has a normally functioning bowel plus a rectum. The more nearly the stomach and intestines can come to functioning in a normal way, emptying of the contents from the stomach to the intestinal tract, and securing from food ingested the necessary elements for maintaining the body, the better control one would have over the output and the colostomy.

The all-important factor in the handling of a colostomy is the matter of food; first, the getting of the right food into the stom-

ach, and then getting the residue out after it has served its purpose in nourishing the body.

The first thing for one with a colostomy to consider is, *What Should He Eat?* This will vary with the individual, but the main thing is to take foods that are known for their nourishing qualities and that do not hamper digestion. Coffee, tea, and any of the cola drinks, nicotine from tobacco, as well as greasy and fried foods, have a retarding effect on the digestive apparatus from the stomach on down and these should be avoided. Even the taking of one cup of coffee has its effect on the normal digestion of the stomach and causes the stomach to empty its contents quicker into the intestines, and in an unprepared state, and in numerous instances this unprepared food tends to a diarrhea; or if not a diarrhea, it does produce a much more watery condition of the bowel contents with some leakage from the colostomy opening.

The average surgeon tells his patient with a colostomy to eat a type of food that is constipating, or foods that are easily digested, such as custards, puddings, and creamed foods, especially the vegetables. This might be necessary in those patients who do have a tendency toward diarrhea, but if thorough mastication of all foods ingested is carried out, and the water or fluid intake with the meals is limited, it brings the passage of foods into the intestinal tract to as near the normal as possible. There must be some residue left in the bowel for proper stimulation for the bowels to empty, and in many instances it will be necessary to eat a

rougher diet, such as spinach, greens, prunes, beets, popcorn, apples, and other types of food that will cause peristalsis and propulsion of fecal contents from the bowels.

The majority of people eat too much, but if the individual picks his food and masticates the same well, he will be able to eat less and still maintain his balance from the food, and keep up his strength and carry on in a normal way. Those individuals who observe these rules as to thorough chewing of foods, leaving off those things that have a tendency to upset their digestion, in many instances can and do eat practically all types of food without any upset from a premature emptying of the colostomy.

A well nourishing breakfast may consist of a cooked cereal, with soft boiled or poached eggs, toast and jelly or marmalade or preserves, and, if there is a tendency to constipation, the use of a few well cooked prunes, and either milk or cocoa can be taken. Berries, without too many seeds, of whatever type that are in season, or any of the melons, will give one a good start for the day. Pancakes and waffles are to be taken guardedly and with not too much grease and butter or too much syrup, to avoid distention of the stomach contents. The main thing is to eat to maintain body nourishment, but at the same time to be cautious not to overeat.

Eat the sustaining and nourishing foods, even to the extent of eating light, and try to keep the body weight to as near normal for age and height as possible. The bowel can digest and then empty with one underweight better than with one overweight.

For lunch any of the vegetables may be partaken of, cooked with salt water and then creamed with either butter or milk, lean meats, either baked or boiled or broiled (avoid grease), with any of the salads without mayonnaise, using the apple cider vinegar dressing with salt and pepper, and a dessert of cup custard, rice pudding, pound-cake, or any of the layer cakes with ice cream or jello or gelatine. Avoid pie-crust and biscuit as these are hard to digest. Here the drink is preferably milk for nourishment and easy digestibility.

The evening meal can consist of practically the same as lunch, with exception that it should not be quite so heavy as lunch, and in smaller quantities with, again, plenty of milk. Any overeating, as well as eating be-

tween meals, will cause undue peristalsis of the intestines; however, here the individual can be his best judge.

To aid in the control of a colostomy, one should know the time-table of digestion and the functioning of his intestinal tract. In the stomach the digestive juices mix with the food as it is churned about by the stomach, and after some three to five hours of this churning the food mass enters the small intestine.

It is in the small intestine that the body extracts nourishment from the food as it passes over an absorbing surface many feet long. It takes from twelve to eighteen hours for the food to complete the trip through the small intestine, at the end of which time practically all the nourishment has been absorbed from the food into the blood stream and practically all of the liquid as well.

As far as usefulness to the body is concerned, the residue might just as well leave the body at this time, that is about twenty-four hours after food is eaten. However, nature decrees a further journey through the large intestine before the mass is thrown from the body as waste. This journey takes another twenty-four hours, making practically forty-eight hours in all.

This, of course, is in the normal individual and one will have to know how much of his large or small intestine has been removed or short-circuited to be able to time his colostomy evacuation so that he can get the most good from the food ingested.

All individuals do not have the same shape or motility of stomach and intestines. Some will act faster. There is also a difference in the strength of the muscles which drive waste along the large intestine, and also in the muscles that finally push the waste out of the body.

Care should be taken in the eating of beans, peas, onions, garlic, and other gaseous producing foods, as the propulsion of gas along the intestinal tract out through the colostomy will carry with it some fecal matter, and these foods should be eaten guardedly.

HOW TO EMPTY THE COLOSTOMY

A clean bowel means a clean colostomy. It is a simple procedure, if properly and intelligently carried out. The bowels moved normally every day for the individual before he had a colostomy, and they should

move normally every day with a colostomy. I have never found it necessary, in approximately five years, to use a laxative.

The bowel contents should be kept as nearly liquid as possible. If two days elapse without a movement, the fecal matter becomes hard, dried out, and the expulsion is more difficult, and pain is experienced in the expulsion; and when hardened fecal matter does accumulate, it leaves the intestine somewhat inflamed, and the patient complains of more or less tenderness. This daily evacuation does eliminate the soreness, and with the intestinal tract empty there is little to fear from an overflow or expelling of fecal matter on the dressings covering the colostomy.

The best time to empty the colostomy is every morning before breakfast, because the food from the day and night before has had ample time to be thoroughly digested, and the absorption of intestinal contents has taken place to such an extent that in the main the majority of food has had all the nourishing qualities extracted and there is very little waste food that will go out through the colostomy.

The best position is prone on the floor or using a pair of folding springs which afford more comfort. Use two or three pints of soapy or plain warm water, allowing five to eight minutes for the fluid to run into the colostomy. When all the water has been allowed to run into the intestines, the patient can stand over the commode with an emesis basin. The contents of the intestines are allowed to empty into this basin, and when full or approximately so, same can be immediately emptied into the commode.

When the colostomy is as nearly empty as possible in the standing position, one may step into the shower proper or into the tub with a shower attachment; then by the use of a sponge the bowel is still further stimulated to empty by stroking with the sponge, starting upward along the right and coming across the abdomen to the left, or from the middle of the abdomen, or to the colostomy wherever situated, at the same time straining the abdominal muscles just as if one were straining at stool. Some anti-skid pad should be used in the shower-bath room or tub to prevent skidding.

The sponge can be a natural sponge or one of cellulose manufacture. The use of

the sponge is recommended because when wet and soapy it produces less irritation of the abdominal wall than an ordinary bath-cloth. Then, too, if any fecal matter should come in contact with the sponge it will be easier to wash off than from a bath-cloth.

While in the shower-bath, stooping over and massaging the abdomen with the sponge stimulates intestinal peristalsis. This, with the bending exercise and with a stimulating of the abdominal muscles with the sponge, forces the fecal contents out through the colostomy.

After the colostomy is thoroughly evacuated in the bath, and after the body has been bathed, there should be a period of relaxation of from 5 to 10 minutes, lying on the bed, so that the peristaltic motion of the bowel is quieted. This relaxation is necessary, as frequently there is a small accumulation of water or fecal matter from inside the colostomy, and this accumulation will not be expelled until there is a relaxation of the bowel and its contents, and this in a prone position. Even though you do not expel all of the intestinal fecal matter and water, peristalsis will cease and will not be resumed for several hours, and the fluid left in the intestines will be absorbed and not expelled on the dressings.

When the patient feels that the colostomy is completely empty, two pads of surgical gauze, 8 x 8 of 24 layer thickness, are placed immediately over the colostomy, then a piece of silk rubber tissue is placed on top of the gauze and finally an abdominal supporter is applied. The gauze is preferable to any cellulose material or cotton as the gauze is more porous, and if there are any unpleasant odors they are immediately filtered through the gauze and pass out, whereas if held by the cotton they will eventually leak and produce a very unsatisfactory odor; besides keeping too much water against the abdominal wall and excoriation of the skin will result.

Cleanliness is the first requisite in the care of a perfectly functioning colostomy, and a thorough washing of the abdomen and colostomy under the shower is one of the best means of accomplishing this end.

An all-elastic bracer, either a B & B bracer or a Hastings bracer should be used, and it should fit snug. This snug-fitting bracer will have a tendency to stop peristalsis, and

in some measure does close the opening to the colostomy and prevents spilling of fecal content out on the pads. These pads can be washed with soap while you are taking your bath and emptying the colostomy. After two or three days of accumulation, these pads are boiled in a special receptacle kept in the bath-room for the deposit of these pads. The boiled and dried pads are then odorless and are as nearly sterile as is possible. There should elapse a period of 20 to 30 minutes from the time of emptying the colostomy to the taking of food. The object of this is to allow peristalsis to stop, and during this period the dressing procedure of the morning toilet, such as shaving and dressing, should be done.

The colostomy opening should be kept as near taut as possible, but not too tight, as the natural tendency of the colostomy is to close. It is an artificial opening, and the muscles through which the gut is passed will have a tendency to close, as well as the skin, around the gut.

If there is some irritation of the skin around the colostomy, or the colostomy itself does become sore and inflamed, Boro-fax or a still heavier ointment, Saratoga, will relieve this condition. If these ointments are used, very little irritation will set up.

Some patients complain that the wearing of tight bracers around the abdomen causes them to feel unusually tight and tired. The abdomen can be relieved if a larger or looser fitting bracer is worn as a night garment. In this way the abdominal walls are given more time for freedom of movement and it gives the muscles of the abdomen and back more rest. With the prone position at night, the intestinal contents will not be so liable to spill through the colostomy opening.

After my experience with a rubber colostomy bag, I cannot recommend the use of it as it is hard to clean and is seldom without odor, besides being very uncomfortable.

Deodorant capsules are recommended by some to keep down any odor coming from the colostomy opening. However, if the routine outlined above is carried out, the deodorant capsules will never be necessary.

APPARATUS NEEDED FOR CARE OF COLOSTOMY

Figure 1 shows an ordinary ear and ulcer syringe, with the top cut off and a rectal



Fig. 1

tube inserted into this funnel made from the ear and ulcer syringe. This funnel is placed in the colostomy smoothly against the abdominal wall and through this funnel the 2 or 3 pints of fluid are placed in the abdomen. The rectal bougie shown is for the dilatation of the colostomy which should be used every four to six days as the colostomy will have a tendency to close.



Fig. 2

Also shown is the pad 8" square that will cover the colostomy after same has been emptied. Edges folded in and sewed to avoid any raw edge.

Figure 2 shows a pair of second-hand seat chair springs, size 18" x 18," tied together in center.



Fig. 3

Figure 3 shows the same springs spread out on the floor with bathmat thrown over the top. This for comfort.



Fig. 4

Figure 4 shows the funnel inserted into the colostomy in the prone position with water running into the bowel. Pressed firm, there will be no spilling.

The enema bag should be from 3½' to 4' above the body in the prone position. If there is some reverse peristaltic contraction of the intestines close to the colostomy, and some pain is experienced, the flow of the water can be checked for a few seconds by merely pinching or kinking the rubber tub-

ing; and, after the pain has subsided, the water can be allowed to flow in again.

The opening in this funnel will possibly have to be enlarged and this can be done by running a red hot nail through the tube. The same applies to the rectal bougie by heating a wire like a coathanger red-hot and enlarging the hole here. This, of course, is done to expedite the emptying of the bowel.



Fig. 5

Figure 5 shows a rectal bougie with a rectal nozzle inserted in the end of same, dilating and at the same time filling the bowel with water. This dilating should be done every fourth day.



Fig. 6

Figure 6 shows the patient in the erect position with emesis basin waiting for fecal contents to empty.



Fig. 7

Figure 7 shows the patient in the act of massaging the abdomen in the direction of the colostomy.



Fig. 8

Figure 8 shows the patient in the prone position, turned on side with emesis basin under colostomy for emptying of final contents.



Fig. 9

Figure 9 shows 2 gauze pads and rubber tissue placed on the abdomen.



Fig. 10



Fig. 11

Figure 10 shows the bracer applied to the abdomen.

Figure 11 shows a folding traveling enema bag with a natural sponge and cellulose sponge. Both are very soft when used on the abdomen for massaging purposes.

CONCLUSION

In making a colostomy as much of the gut as possible should be allowed to come through the abdominal opening as there will be a shrinkage of the intestine proper and a choking off by the abdomen muscles as well as the skin. It is much better to have more of the gut on the abdominal wall than not enough.

815 Massey Building.

CANCER OF THE MOUTH

JOHN DAY PEAKE, M. D.

Mobile, Alabama

This is a plea for the early diagnosis and treatment of mouth cancer, including the lips, cheeks, tongue, gums and the floor of the mouth.

There were 181,000 cancer deaths in the United States in 1946. In our country there are 700,000 living cancer patients. One out of every eight now living will die from cancer, 17,000,000 of our population, if the present cancer death rate continues. Moreover, 10,880, or 6.01 per cent, of male cancer deaths are the result of buccal cavity cancer.

The specific cause of cancer is not known, but we do know that the factors which have much to do with an individual developing cancer are extrinsic, or environmental, (such as chronic irritation), and intrinsic. The inherent germ plasm of these individuals is the intrinsic factor.

I shall try to point out some of the common lesions of the lip and oral cavity that should be considered in an oral examination.

LIPS

The lips should be the first phase of our examination. Watch for so-called fever blisters. If these have been present for more

than two or three weeks, one should look upon them with suspicion. First rule out syphilis. In these acute lesions a primary chancre should be considered and darkfield examination made. If late syphilis, a Wassermann should be done. Often patients with syphilis have cancer, so if there is any question a biopsy of the lip should be done.

Keratosis, chronic crusts and cracks in the lips, especially the lower lip, should be watched, and if they persist a biopsy is a justifiable procedure. One who has chronic lesions on the lips should have close observation and told not to forget it. White spots, smoker's lip or leukoplakia, are very definitely precancerous. Chronic trauma to the lips due to teeth either in poor position or ones that are too sharp often causes lesions and if not corrected may lead to cancer.

Cysts of the lips usually do not cause any real trouble but will often worry the patient. Changes of the lips secondary to general poor health, especially vitamin deficiency, are quite common. Benign warts occur on the lips and are often confusing. The dentist and family physician will see these patients before the consultant, and it is my plea that cancer be considered in every dental and physical examination. Cancer of the lip if diagnosed early and treated

promptly will give a 90% cure. If the diagnosis is delayed until there is lymph node involvement, the chance of cure is less than 25%.

One may treat these lesions by radium, x-ray or surgery, but the important part of cancer therapy is *early treatment*. Do not allow the patient to postpone treatment and if there is any question about the diagnosis, biopsy is most important. The precancerous lesions such as leukoplakia, keratosis, fissure and chronic lesions from faulty teeth should be treated. Do not allow a tooth to cause chronic irritation of the lip.

Remove keratoses, fissures and leukoplakia if they do not respond to simple medication. The patient should be told to stop smoking, stay out of the sun, keep the lips protected with some type of bland ointment, and improve dental hygiene and the general health.

TONGUE

The tongue should be the next part of an oral examination. The old family doctor was able to get considerable information by inspection of the tongue. The general health of the patient can be partly determined by the appearance of this organ. Deficiency states, such as vitamin deficiency (pellagra) and primary anemia, can be suspected by simple inspection of the tongue.

Chronic ulcers of the tongue from faulty teeth are certainly a condition that dentists see every day. Sore tongues due to electrolysis between different types of metal in dental fillings should be noted. Leukoplakia may occur in syphilitics or non-syphilitics with malignancy or simple benign white plaque. Syphilis may be a primary growth from which a darkfield examination may demonstrate *Spirochaeta pallida*. The tongue can be involved by secondary syphilis as well as by gumma. A Wassermann should be a routine procedure if there is a chronic tongue lesion. Syphilis does not exclude cancer, as 20% of tongue cancer is complicated by syphilis.

Tuberculosis may be primary or secondary, may be of tubercle or lupus type, and from which tubercle bacilli may be demonstrated. A positive skin test and proved pulmonary tuberculosis will give additional proof of tuberculosis.

Glossitis, lesions on the tongue due to burns, infections and wounds should be watched and if they do not heal in a matter of one month, cancer should be considered. The treatment should be started as early as possible. Early cancer of the tongue has a fair prognosis, especially the very early cancer. If treatment is delayed until the lesion involves more than 1 cm. and there are involved lymph nodes, the prognosis is less than 20%.

One can treat cancer of the tongue with surgery, radium and x-ray, either alone or in combination. The method of choice depends upon the site, size and extent of the lesion, and microscopic findings on specimens taken from it. Often palliation can be given to these patients by small doses of x-ray. One cannot overemphasize the importance of rigid mouth hygiene.

ORAL CAVITY

Exclusive of Tongue

Lesions of the gums, cheeks and floor of the mouth can be grouped together. Any swelling or thickening of the mucous membrane, wart-like growths or ulcers of the cheeks, gums or floor of the mouth that do not heal in several weeks should have an early biopsy. Some of these lesions extend to neighboring structures and interfere with normal functioning. Later there is severe pain, hemorrhage and a putrid mouth.

Blood dyscrasias, such as leukemia, agranulocytic angina, and primary anemia, all may cause chronic lesions in the mouth and should be considered in all oral examinations.

Vincent's angina (trench mouth) is perhaps the one most common infection of the mouth, especially the gums. Often trench mouth, like syphilis, may be present when cancer is present.

Leukoplakia is quite common in the mouth, either as the result of syphilis or chronic irritation, or it may be precancerous. These lesions, as on the tongue and lip, should be looked upon with grave concern. Much of the cancer seen in the mouth forms on leukoplakia. Chronic infection in the mouth may result from local infection, irritation from faulty teeth, or constant use of tobacco and snuff.

Syphilis of the mouth is most confusing and occurs in about 20% of the oral cancer cases. A darkfield for the very early

chancres will often give a diagnosis while the lesion is local. Wassermann in an early chancre may be negative, so repeat this examination after several weeks. Syphilis can involve the mouth by secondary and tertiary lesions.

Epulis is fairly common on the lower jaw and this appears like red cherry papillary growths along the alveolar processes between the teeth. These are benign in most cases. They may be confused with epithelioma of the gums. Destruction of epulis usually requires removal of adjacent teeth and adjacent tissue.

Fungus and yeast infection of the mouth, such as actinomycosis, can easily be diagnosed by demonstrating the yeast or fungus in microscopic study or by culture. General debilitation from chronic disease, old age, vitamin deficiency and poor mouth hygiene are often the cause of putrid mouth from which a cancer cannot be differentiated.

The treatment of cancer of the mouth as in all other sites should be governed by the size, site, extent, duration and microscopic findings. Early diagnosis is the most important part of therapy. The mouth should

be cleaned of infection, as cancer of the mouth is much worse and spreads much more if there is infection. This is especially true in cancer of the gums. It is important that teeth be extracted or at least ground to the gum margin before any radiation is given in oral cancer. Extracting teeth after having given radiation to the jaw often results in radio-osteonecrosis.

The methods of treatment again are surgery, x-ray and radium, either alone or combined. No one method can be used in all cases. Early diagnosis and treatment are the most important factors.

CONCLUSION

1. Cancer of the mouth is a condition that should be diagnosed very early if one will consider cancer in all oral examinations and have a biopsy if there is any question.

2. If cancer of the lip, tongue and mouth can be treated early, the cure rate is very good, whereas if the treatment is later the cure rate is less than 20%.

3. The dentist and family physician have the responsibility of early diagnosis of lip and oral cancer.

LUNG ABSCESS

CHARLES J. DONALD, JR., M. D.

Birmingham, Alabama

The condition, lung abscess, has long been a very trying problem both to the patient and the medical profession. In the past several years some definite advancement has been made in the care of these patients. For this reason, it was thought that a brief review of the etiology, pathology, and treatment would be worth while at this time.

The right lung is involved twice as often as the left lung evidently because an aspirated body will fall more frequently into the right main bronchus than the left.

ETIOLOGY

1. Trauma, either surgical or accidental, upon the upper respiratory passages, as ton-

From the Department of Thoracic Surgery, Medical College of Alabama.

Consultant in Thoracic Surgery, Employees' Hospital, Fairfield.

Read before the Association in annual session, Birmingham, April 15, 1947.

sillectomy, tooth extraction, nasal and sinus operations and fractured jaws, accounts for over 50% of lung abscesses. This is thought to occur because bacteria-laden mucus, blood clots or pus are aspirated into the bronchial tree.

2. Occlusion of bronchus, whether due to a tumor, foreign body, broncholiths or stricture, may produce atelectasis, stasis, bacterial proliferation, pneumonitis, and later abscesses.

3. Emboli via the blood stream and resulting infarction (e.g., thrombophlebitis, septicemia and endocarditis) are sometimes etiologic agents.

4. Aspirated vegetable bodies are particularly bad, especially peanuts. They cause a severe pneumonitis and should be removed as soon as possible.

5. Probably around 15% of lung abscesses are not severe and are not diagnosed clini-

cally. They give a mild reaction and heal spontaneously.

6. Lung abscess may follow pneumonia. However, this does not occur as frequently now as before the advent of chemotherapy.

There are many microorganisms that have been found in lung abscesses. Various strains of streptococci and staphylococci are quite common as are the Vincent microorganisms. Others that are sometimes found are the colon bacillus, the diphtheroid group of bacilli, pneumococci, actinomycetes, monilia, coccidia, and Friedlander's bacillus.

CLINICAL PATHOLOGY OF PUTRID LUNG ABSCESS

Regardless of the etiologic factors in the putrid type, whether they be secondary to a primary blockade of the bronchus by a foreign body or tumor or suppuration superimposed upon infarction from an embolus or primary infarction from virulent microorganisms, the area of lung involved becomes atelectatic. The alveoli become filled with debris consisting of pus cells, fluids and serum, and the parenchymal tissue is liquefied and destroyed. An anerobic medium is nearly always present. The bronchial

tree distal to the original site becomes blocked and the blood vessels of the lung which spread out somewhat in a fan-like fashion toward the periphery also become occluded distal to this particular area and thereby increase the necrosis of the lung tissue. Consequently, as Neuhof and Touroff¹ have so well shown, the inflammation extends to the lung periphery in nearly all instances and a pleuritis is established which brings about adherence of the visceral and parietal pleurae over the area involved. This is usually adjacent to the thoracic cage.

The non-putrid type of lung abscess is usually secondary to pneumonia of a lobular type.

CLINICAL COURSE OF ACUTE PUTRID LUNG ABSCESS

The acute signs and symptoms usually start 12 to 15 days after the acquisition of the etiologic agent (aspiration following tonsillectomy or a fractured jaw, e. g.). Before this there ordinarily is some pleural pain and possibly some slight elevation of tem-

1. Acute Putrid Abscess; Relationship of Technique of One Stage Operation, Neuhof and Touroff, Ann. Surg. 118: 656-666, Oct. 1943.

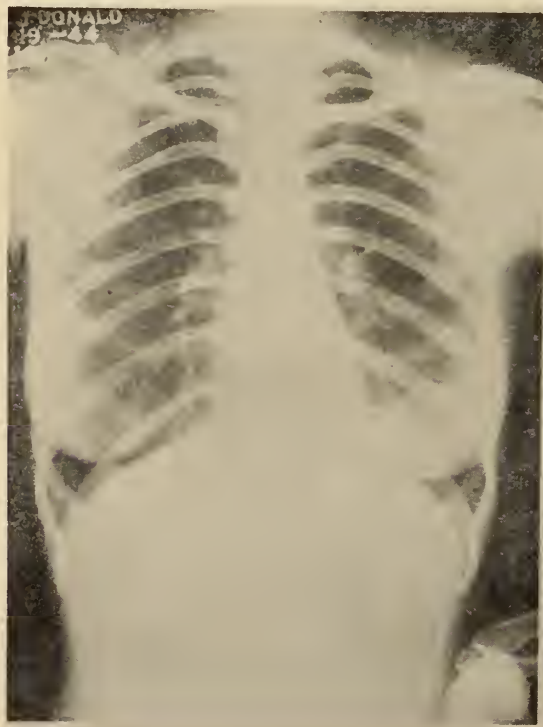


Fig. 1. Note infiltration in left cardiophrenic angle.



Fig. 2. Infiltration has completely cleared up following sulfadiazine.



perature. The acute onset of symptoms is due to an acute pneumonitis, and in most instances are some cough, temperature 101 to 102, a pleuritic type of pain (the pleura is involved in the inflammatory process) and sometimes blood-streaked sputum which becomes foul and profuse. In most instances this acute process begins to subside in a week or ten days and if healing does not take place localization occurs.

In an *acute non-putrid lung abscess* there is usually the history of some type of pneumonia which does not follow the normal course. Instead of the temperature falling, some degree of fever is present and does not subside. Whenever this occurs one should be on the lookout for an early abscess. After the abscess develops, expectoration becomes more profuse and toxemia may or may not be marked. This type that follows pneumonia is frequently multiple and usually the course is progressively downward.

TREATMENT OF ACUTE LUNG ABSCESS

1. Bed rest.

2. Chemotherapy (penicillin first, sulfa drugs and arsenicals second). When penicillin is given, large doses should be used—50,000 to 100,000 units every 2 to 3 hours during the first day or so with the dosage gradually reduced as improvement occurs.

Fig. 3. Note marked infiltration of right upper lobe.

Figs. 4 and 5. Following penicillin therapy there is a progressive improvement in the infiltration.

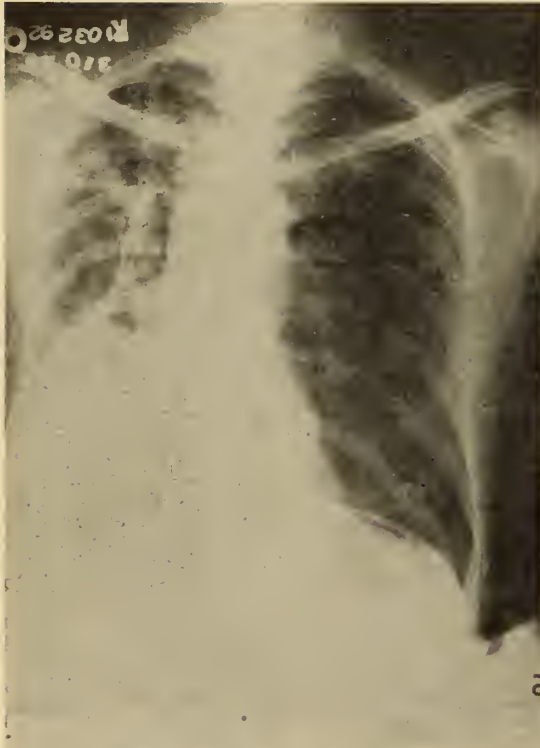


Fig. 6. Note marked infiltration in right base of lung.

Figs. 7 and 8. Three weeks later there is a cavity located posteriorly.

If penicillin is going to cure a lung abscess it will do so quickly and dramatically. Most abscesses will improve under penicillin but unless the cough and putrid sputum cease, together with complete regression of the abscess as demonstrated roentgenographically, a patient cannot be considered cured.

3. Bronchoscopy should be done to rule out any obstruction, whether due to a tumor, foreign body or stricture. Occasionally one will be able to get good drainage of the abscess by bronchoscopic aspiration. However, except for the occasional case the bronchoscope should be used for diagnostic purposes only.

4. In acutely ill patients one must sometimes resort to surgical drainage quite early. The abscess cavity in putrid abscesses has an anerobic medium. Therefore, if one drains this anerobic area, giving it plenty of aeration and drainage without entering the free pleural cavity, the necrotizing action of the anerobic microorganisms is greatly diminished.²

5. Postural Drainage. If the abscess communicates with a bronchus, it is of some def-

2. Acute Putrid Abscess; Hyperacute Variety, Neuhof and Touroff, J. Thoracic Surg. 12: 98-106, Oct. 1942.



Fig. 9. Three weeks caused a marked increase in the abscess and infiltration of the entire right lung. This patient was quite ill.

Fig. 10. Postoperative film following a six-rib thoracoplasty.



inite value provided the patient is not too ill to carry this out.

The *surgical treatment* of lung abscess may be divided into drainage and pulmonary resection.

The pleural cavity is always obliterated over the abscess as has been shown by Neuhoef and Touroff.³ They have demonstrated that when a site of lung is involved in putrid abscess formation the blood supply and bronchi distal to the involved area are blocked off; that almost invariably less than $\frac{1}{2}$ in. of compressed lung lies between the abscess and the lung periphery; that the acute inflammatory reaction proper has almost invariably extended completely to the periphery and that sufficient sealing of the visceral and parietal pleurae has occurred to enable one to incise nearly always directly into the abscessed cavity through the pleural cavity. This is always true except in a very centrally localized abscess and oc-

asionally when the abscess points into an interlobar fissure.

The most important point in drainage of any lung abscess is the proper localization of the abscess. This can be done only after x-rays have been taken from many exposures. The most frequent site of drainage is in the postero-superior part of the lower lobe.

These abscesses should be drained under local anesthesia to enable the patient to cough up any infected sputum in the bronchial tree. If the incision is in the proper place one should find an obliterated pleural space and beneath it the abscess.⁴ The abscess must be unroofed, explored and finally packed. This packing should be changed every 1 to 3 days until it heals which usually takes up to 6 to 10 weeks. The wounds are left open.

The early drainage of an abscess is to be strongly recommended in order that the adjacent lung will not become diseased and bronchiectatic. If a prompt and spectacular response to conservative treatment does not occur in 3 to 6 weeks then surgical drainage should be instituted without undue delay.

3. Acute Putrid Abscess; Principle of Operative Treatment, Neuhoef and Touroff, *Surg., Gynec. and Obst.* 63: 353-368, 1936.

4. Pulmonary Abscess; Value of Early One Stage Operation, Robert R. Shaw, *J. Thoracic Surg.* 453-467, April 1942.

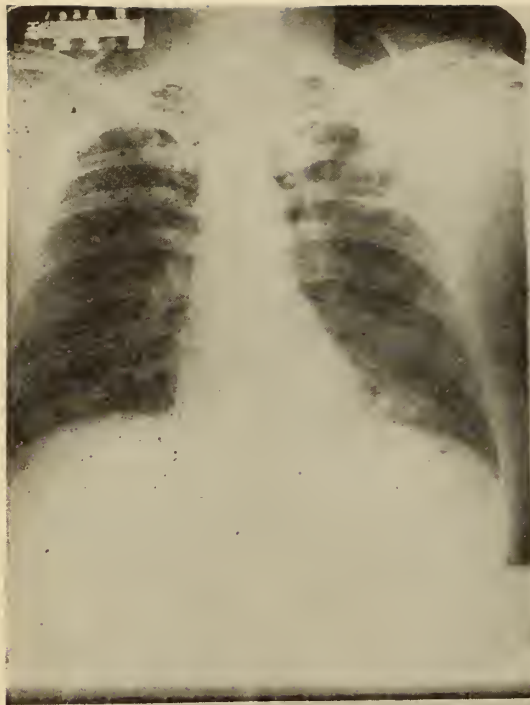


Fig. 11. Shows large cavity of left upper lobe, not unlike many tuberculous cavities.

Figs. 12 and 13. Rapid increase in the size of cavity. Note the irregular shadow in cavity that was found to be ulcerated bronchiogenic carcinoma.

The treatment of chronic abscesses is an altogether different thing. In this condition there is already irreparable damage to the portion of the lung involved and, while simple drainage alone will make the patient much better, the resection of the diseased portion of the lung is the only procedure that will cure these patients.

The danger of hemorrhage in either pre- or postoperative lung abscess is always serious and often a frequent complication. One must constantly have this in mind and try to guard against it. By resecting the diseased lung these patients are restored to normal health with a minimum of morbidity and hospitalization. There is no residual cough or likelihood of further trouble from this suppurative process.

The surgical treatment of lung abscess depends entirely on the type of abscess. In the past, surgical drainage was thought to be the final answer. However, once an abscess has been present for 6 to 8 weeks and longer, irreparable damage has usually already been done. While drainage may help these patients it will not cure them as they will have a residual cough from the resulting bronchiectasis.

I believe that one of the main indications for drainage is in the acutely ill patient who



Fig. 14. Note area of pneumonitis in right

cardiophrenic angle one week after tonsillectomy.

Fig. 15. Shows progression of disease in spite of adequate chemotherapy.

Fig. 16. The lateral view reveals the process to be limited to the middle lobe.

does not respond to chemotherapy and who is losing ground rapidly. In this type of case, drainage (practically always one stage) may be life saving.⁵ Drainage also has a very definite part in the treatment of very large cavities and in the treatment of an abscess in an old poor risk patient. While admittedly it does not give a perfect result in these last two types of patients it will greatly improve their general condition, so that a resection of the diseased segment of lung may be done at a later time.

The advantages of drainage are: 1. it can be done under local anesthesia on very ill patients; 2. by open drainage the anerobic medium of an abscess cavity is completely aerated and the necrotizing action of the microorganisms is stopped; and 3. if drainage is instituted very early it will cure most acute lung abscesses.

The disadvantages of drainage are: 1. unless done on very acute abscesses it will not cure the patient; 2. much morbidity and long hospitalization; and 3. the possibility of secondary hemorrhage by erosion of a large vessel.

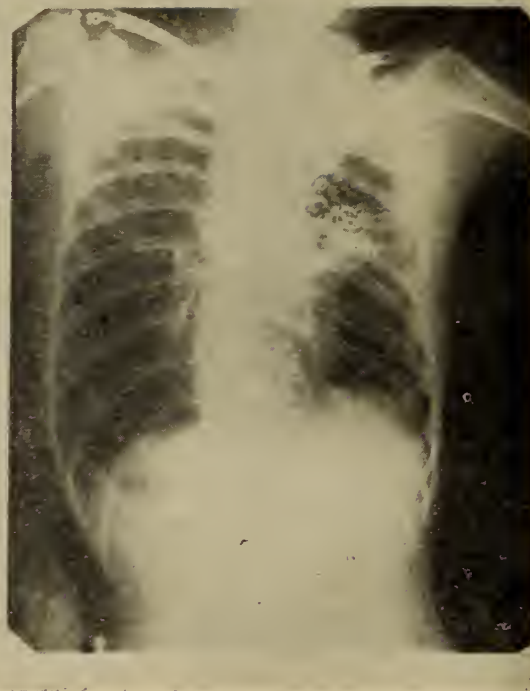
I believe the best surgical treatment of the chronic lung abscess in the majority of

5. Acute Putrid Abscess of Lung, Neuhof and Touroff, *J. Thoracic Surg.* 9: 439, 1940.



Fig. 17. Postoperative x-ray of chest. This demonstrates how the other two lobes have expanded and filled the right pleural cavity.

Fig. 18. Bronchiogram made postoperatively that shows absence of any abscess or bronchiectatic cavity.



cases is resection of the abscessed segment of the lung. The advantages of this are obvious: 1. short hospitalization and morbidity, 2. complete eradication of the abscess, 3. no danger of a secondary hemorrhage and 4. it can be done following drainage of a lung abscess.

The disadvantage is that it cannot be done on patients of all ages and risks.

It is obvious from the above that there is no one treatment of lung abscess and that each case must be individualized. However, with the wonderful aid that large doses of penicillin affords, the necessity for drainage is becoming less and less frequent.

The following cases will illustrate the various types of treatment and the results.

1. Mrs. J. D., age 22, severe attack of influenza three weeks previously. Since then she had had a daily fever, cough and putrid sputum. X-ray revealed a shadow in the left lower lobe with no cavitation. (Fig. 1.) Bed rest and sulfadiazine caused a complete regression of all symptoms and x-ray shadows. (Fig. 2.)

This patient was evidently given the sulfadiazine in time to prevent actual cavity

formation. However, with the putrid sputum, cough and fever, I believe she can be classed as a very early abscess.

2. Mr. R. R., age 35, had been ill at home for 4 weeks. His physician had diagnosed him as having severe influenza. He had received large doses of one of the sulfa drugs while at home. In spite of this he continued to run fever and developed a cough and a putrid sputum. He was then hospitalized. X-ray revealed a marked infiltration of the right upper lobe with questionable cavity formation. (Fig. 3.) He received penicillin for 6 days with a dramatic improvement. (Fig. 4.) He improved rapidly afterward and the abscess disappeared as shown on serial x-ray films. (Fig. 5.) He has continued to be well two years afterward.

This case demonstrates the rapid and spectacular results that occur when penicillin will cure these patients.

3. R. S., age 34, colored, developed an abscess in the right lower lobe following a tooth extraction. (Fig. 6.) He was treated with large doses of penicillin and sulfa with some improvement. (Figs. 7 and 8.) Although he gained weight and felt better, he continued to cough and to have a cavity in the right lower lobe. He then was dismissed from the hospital and followed in the outpatient clinic. In three weeks time the entire right chest became involved. (Fig. 9.) His fever, cough, hemoptysis and putrid sputum increased rapidly. He developed an extremely large cavity and was acutely ill. Under local anesthesia the abscess was unroofed by resecting portions of three ribs and packed. Approximately 10 days later he had a serious hemorrhage

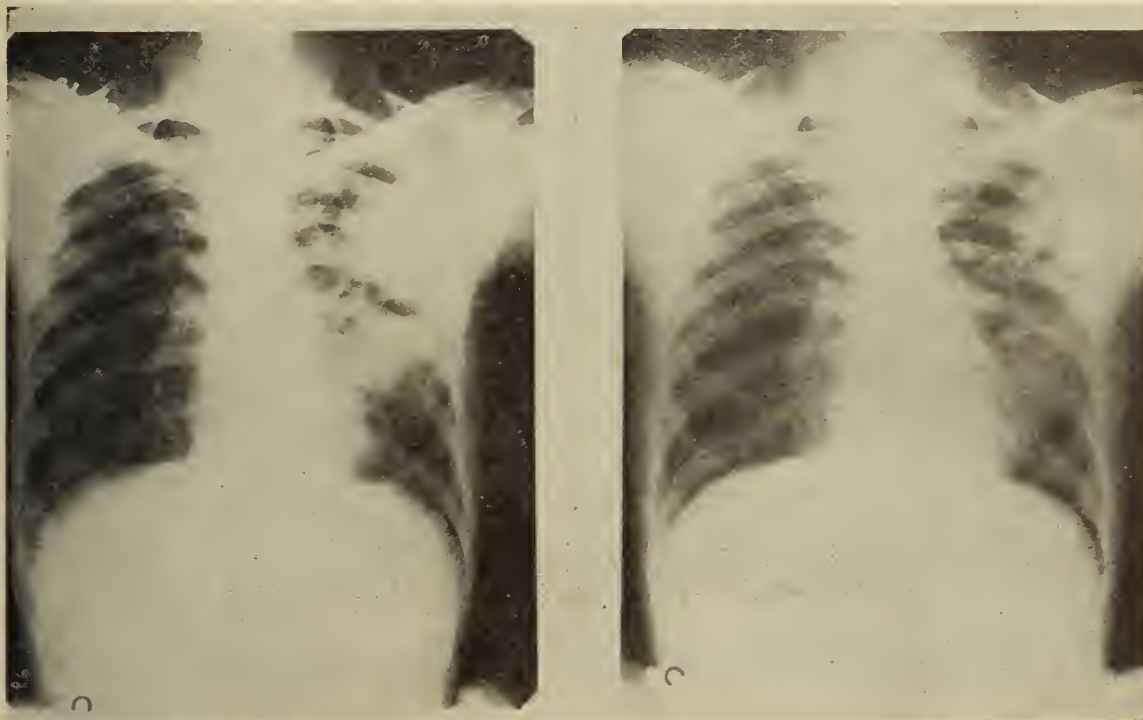


Fig. 19. Reveals two abscess cavities in the left upper lobe.

Fig. 20. X-ray taken two months later. This shows much improvement but there is still a small cavity that remains.

from a bleeding vessel adjacent to the chest wall. Fortunately we were able to locate and ligate it. His cavity was so large that the defect was closed by a 6-rib thoracoplasty. (Fig. 10.)

Following this he was greatly improved and gained approximately 40 lbs. in weight. He did not return to the clinic for about eight months. When he did return he had another abscess approximately the same size as the original abscess. He had lost a tremendous amount of weight, was running fever and had a very foul sputum. His abscess was drained the second time, from which he improved very slowly.

In retrospect this man should have been urged to have a pneumonectomy following his thoracoplasty. He still had residual trouble in spite of adequate drainage and a thoracoplasty.

4. J. B., age 47, white, admitted because of hemoptysis and cough. He had no fever or foul sputum. Roentgenograms revealed a large cavity in the left apex. (Figs. 11, 12, 13.) Repeated sputum examination did not reveal any tubercle bacilli. He had no improvement on chemotherapy. Bronchoscopy revealed a normal tracheobronchial tree except for a reddened left upper lobe bronchus. The patient left the hospital without permission and returned 2 ½ months later with the same complaint. Exploration re-

vealed a large degenerated carcinoma with metastasis to the chest wall.

This case demonstrates that all too often an abscess is secondary to bronchiogenic carcinoma.

5. Mrs. P. P., age 22, white, had a tonsillectomy and two days later had a pain in her right anterior chest. She then began to cough, raise putrid sputum, and run fever. X-ray revealed an area of pneumonitis to the right of the heart. (Fig. 14.) During the next two months she was almost constantly on either large doses of penicillin or sulfadiazine. She received more than 5 million units of penicillin. When these were stopped her cough would immediately increase and become more putrid. No definite abscess cavity could ever be seen on the roentgenogram. Roentgenograms revealed only a pneumonitis of the right middle lobe. (Fig. 15 and 16.) Because of no improvement in spite of adequate chemotherapy and because no cavity could ever be demonstrated for an early drainage a right middle lobectomy was decided upon. This was done and the patient had an uneventful convalescence and left the hospital on the 12th postoperative day. (Figs. 17 and 18.) This is the earliest lobectomy that I know of that has been done for lung abscess. She was able to do light housework in six weeks time. This case also shows the short hospitalization and decreased morbidity from the resection of the abscess.

6. Mr. A. C., age 26, white, was admitted to the hospital in May 1943 after he had developed a lung abscess of the left upper lobe following tonsillectomy. (Fig. 19.) This patient had weight loss, fever, foul sputum and hemoptysis. Chemo-

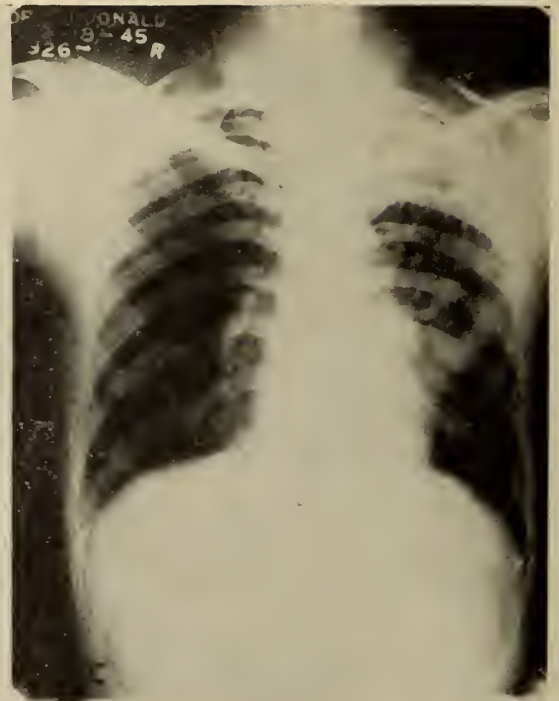
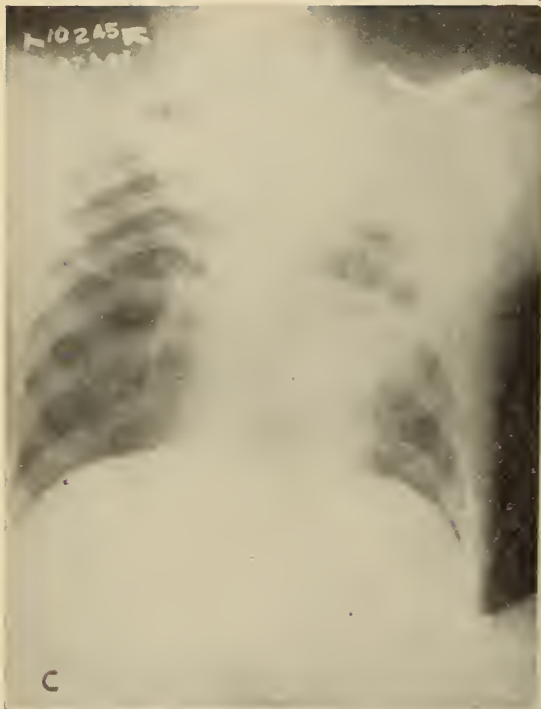


Fig. 21. X-ray taken 2½ years later reveals abscess process has recurred.

Fig. 22. Two weeks later. Shows marked improvement following penicillin.

Fig. 23. Postoperative x-ray shows that the

left lower lobe has filled left pleural cavity. Note compensatory elevation of the diaphragm.

therapy produced a marked improvement both in his symptoms as well as on the roentgenograms. (Figs. 20, 21 and 22.) However, he still had some cough and a small cavity always remained on his roentgenograms following the chemotherapy. The abscess recurred many times.

In November 1945 a surgical consultation was requested and a left upper lobectomy was done. He remained in the hospital 14 days following his operation and has been physically well and able to do heavy work since that time. (Fig. 23.)

This case shows the inadequacy of chemotherapy in chronic abscesses except to improve the general condition.

7. Mr. A. B., age 45, developed a lung abscess in his right upper lung following pneumonia. (Fig. 24.) Foul sputum, hemoptysis, weight loss and fever were his chief symptoms. He would raise an emesis basin full of blood at one time. Chemotherapy gave very little improvement. He refused any surgery on his first admission. However, he finally consented after six months time. By then the abscess had extended from the upper lobe into the middle lobe. (Fig. 25.) The right upper and middle lobes were removed. He had an uneventful convalescence and was up helping make his bed on the 7th postoperative day. He returned to heavy work at the end of three months time. (Fig. 26.)

By waiting another six months this patient had to sacrifice his middle lobe as well as the upper lobe. This lobe was involved by direct extension of the right abscess. Any unnecessary delay may invite progression of the abscess formation.

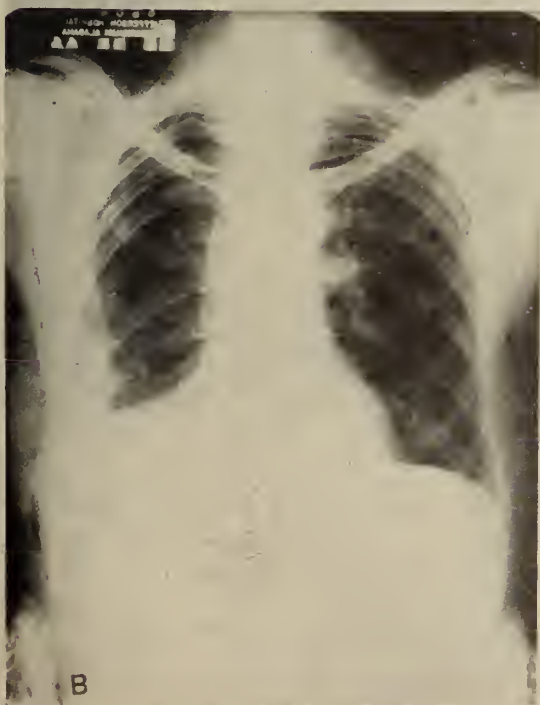


Fig. 24. Attempted bronchiogram. Note infiltration in mid-portion of right lung. The lipiodal did not go in this portion.

Fig. 25. Six months later. Shows a marked increase in the infiltration. No cavity demonstrated.



Fig. 26. Postoperative x-ray following upper and middle lobectomy. The right lower lobe has filled the right pleural cavity.

SUMMARY

1. There are many causes of lung abscess. However, about one half result from trauma or surgery of the nasopharynx or jaw.

2. Lung abscesses should be diagnosed early and treated vigorously with large doses of penicillin. If an abscess is going to be cured by chemotherapy there is a rapid and dramatic improvement. One should not be lured into a sense of false security by the patient becoming asymptomatic and yet still demonstrate a cavity roentgenographically.

3. Drainage of an acute abscess may be life saving. Drainage of a chronic abscess will improve the patient's general condition but will not cure him.

4. Hemorrhage is a very dangerous, and all too often, complication.

5. The cure of a chronic lung abscess will result only from the resection of the diseased segment of lung. This procedure can now be done with a mortality of around 2% and gives an ideal result in the shortest degree of time.

6. Finally, the successful treatment of these patients depends on very close teamwork of the internist, the roentgenologist, the bronchoscopist, the anesthesiologist, and the surgeon.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham
C. E. ABBOTT Tuscaloosa
JOHN L. BRANCH Montgomery
D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

December 1947

**THE PHYSICIAN AND ALABAMA'S NEW
PREMARITAL BLOOD TEST LAW**

The Code of Alabama 1940, that provided for an antenuptial medical examination of all male persons previous to making application for a marriage license, has been amended to require a medical examination of both parties to a marriage contract. The law as now amended makes it mandatory that a

blood test for syphilis be made on both applicants for a marriage license. The law also requires that a certificate be obtained by both parties from a physician. In this certificate the physician must certify that he has given the applicant a physical examination including a standard blood test for syphilis. Certificates from both the laboratory making the blood test and from the physician are to be presented to the marriage license clerk before the clerk is permitted to issue the license. The clerk is required to attach the certificates to the marriage license before the license will be valid for the performance of the marriage ceremony; and it is necessary that the blood test be performed within 30 days before application for the marriage license is made.

In Alabama the blood test will be performed in the Laboratories of the State Health Department or in a laboratory approved by the State Board of Health. In other states the test must be performed in the laboratories of the State Department of Health or in a laboratory approved by the Department of Health of the state in which the laboratory is located.

When submitting blood to the laboratory for a premarital blood test, the physician will include, in addition to the regular laboratory form with carbon inserts, a special "Premarital" request form which will be as follows:

TO LABORATORIES
OF
STATE DEPARTMENT OF HEALTH
REQUEST FOR ANTENUPTIAL SEROLOGIC TEST FOR SYPHILIS

Sent by Dr.

Address
(Physician's address)

Applicant's full name

Applicant's address

Date specimen was taken

Note: The information requested above is necessary before the laboratory can issue the required laboratory certificate. Failure to furnish any of the information will cause needless delay.

When the laboratory examination of the blood specimen has been completed, the laboratory will fill out the laboratory certificate and forward same to the physician, together with the physician's copy of the laboratory report. On receipt of the laboratory report and the laboratory certificate,

the physician will complete his certificate. The certificate forms will then be ready for presenting to the clerk who issues the license.

For the convenience of all concerned, the laboratory certificate and the physician's certificate will be on the same sheet. These

certificates will be forwarded to the physician when a premarital blood specimen is received at the laboratory. The certificate form is shown below:

Department of Health
Montgomery
State of Alabama

THE CERTIFICATE FORM
FOR
ANTENUPTIAL MEDICAL EXAMINATION

LABORATORY CERTIFICATE

This is to certify that a specimen of blood submitted under date of _____
(Date specimen was taken)
in the name of _____
(Name of applicant)
submitted by _____ of _____
(Name of physician) (Address of physician)
was subjected to a _____ test for the discovery of syphilis, which was com-
pleted on _____
(Date)

(Name of Laboratory) (Address of Laboratory)

(Name of Director) (Authorized Representative)
In the State of Alabama the blood test must be performed in one of the laboratories of the State Department of Health or in a laboratory approved by the State Board of Health. In other states the test must be performed in the laboratory approved by the Department of Health of the state where the laboratory is located.

DO NOT DETACH

PHYSICIAN'S CERTIFICATE

To Clerk Issuing Marriage License:

Pursuant to the Code of Alabama 1940, as amended in 1947, I do hereby certify that I have given a physical examination including a standard blood test for syphilis, as required by the Alabama Department of Health for the discovery of syphilis, to

_____ on _____ 19_____
(Full name of applicant) (Date)
and that, in my opinion, said applicant is not infected with syphilis or, if infected, is not in a stage of that disease whereby it may be communicable. I do further certify that I am a physician duly licensed to practice in the State of _____.

(Signature of Physician)

NOTE: The Code of Alabama 1940, as amended in 1947, provides that the physical examination and blood test must be performed within 30 days before the date of application for a marriage license. This certificate must be signed by a physician duly licensed to practice in Alabama or by a physician duly licensed to practice in other states. These certificates must be filed with the Judge of Probate before a marriage license can be issued. Exceptions: In cases where an emergency exists, the Judge of Probate is authorized and empowered to issue licenses without the certificates as provided by law.

The regular laboratory report on the blood test sent to the physician is for the information of the physician and is to be treated as confidential matter. Do not attach the laboratory report to the certificate form.

The new law becomes effective January 2, 1948. The special request form for premarital blood tests will be available through County Health Departments.

In view of the above, it will be necessary to approve certain laboratories throughout the state desiring to perform the premarital serologic test for syphilis. Such laboratories

must apply to the Bureau of Laboratories, State Board of Health, for approval. The serologist of those laboratories empowered to make these tests must be a Registered Medical Technician under the provisions of law of the State of Alabama, Chapter 8, Sec. 151-167, Code of 1940, or a physician licensed to practice in the State of Alabama who possesses the necessary qualifications.

A temporary approval of any serologist desirous of making these tests will be given for a period of four months only, pending the practical evaluation of the serologist in

question. During this four months period repeated check specimens of serum will be submitted to the serologist by the State Department of Health. At the end of four months, beginning January 2, 1948, confirmation or cancellation of this temporary approval will be made by the Director of Laboratories, Alabama State Board of Health. This will be determined on the basis of the results of the practical evaluation study. Successful candidates will be granted a certificate of approval by the State Board of Health. If an approved serologist resigns, the successor must undergo the evaluation for a certificate as above provided.

It will be the duty of any hospital losing the services of its serologist to notify the Bureau of Laboratories at once giving the names of both the one who has resigned and the successor so that the list of serologists may be accurate.

THE PRESIDENT'S PARAGRAPH

The President of the Medical Association of the State of Alabama extends greetings to each County Medical Society and to all of its members. As much as he would like to visit your County Medical Society during his term of office, it is obviously impossible to do so. The best way, therefore, of reaching the members of the Association is through our State Medical Journal.

The time for selecting the officers of the County Medical Societies for the ensuing year is at hand. The work of your Society during the coming year will depend largely upon the officers for the next twelve months. It is hoped that the real purpose and function of a County Medical Society will be uppermost in the minds of those entrusted with its activities. Certain suggestions are offered with the view of improving the work that may be planned.

1. Keep in mind the proper relationship of the County Medical Society to the State Medical Association, of which you are a definite part. Learn more about the State organization and the effective work of the State Board of Health. Alabama is in the unique position of being the only State in which the State Medical Association is charged, legally and financially, with the full responsibility of the public health of the State. Its governing body is exclusively made up of medical personnel. You have the

right to be critical, but at the same time be appreciative of the work and worth of your State Medical Association.

2. Consider the welfare and responsibility of the County Medical Society to each member of it. Here is the laboratory and workshop for improving and increasing the capacity of those who comprise your membership. Your programs should encourage the local members to prepare and present material of interest to the group. An exchange of programs by neighboring counties often encourages cordiality and hospitality.

3. Plan your program for the new year so that certain objectives may be obtained. Appoint a committee to arrange for at least one meeting devoted to the discussion of cancer and its problems. Have another meeting devoted to maternal and infant welfare. A discussion of public relations and the work of your County Board of Health will be stimulating. Occasionally have the work of the State Board of Health reviewed, with critical suggestions.

Begin thinking about the annual meeting of the Association in Mobile, April 15, 16 and 17, 1948. Send in the names of all physicians of the State who have been practicing medicine fifty years or longer. We want to start a "Fifty-Year Club," and to celebrate the golden anniversary in Mobile.

J. P. Chapman, M. D.

ASSOCIATION DUES INCREASED

Without a dissenting vote, the Association, at its 1947 session held in Birmingham, adopted President Carl A. Grote's recommendation, with amendment suggested by the State Board of Censors, that dues of Active Counsellors and members be increased fifteen dollars (\$15.00) annually beginning January 1, 1948. Thus, from that date, dues of Active Counsellors will be twenty-five dollars (\$25.00) and members, with two exceptions, twenty dollars (\$20.00). The exceptions are members who have graduated within the past five years, and County Health Officers and full-time medical employees of the State, who will continue to pay \$5.00. For some time, members who have been continuously identified with the Association for thirty (30) years have been exempt from the payment of State dues and this exemption will remain in effect; and Life Counsellors are also exempt, in

consideration of having served the Association for twenty years, and of having paid dues for that length of time.

In his Presidential Message, delivered before the Association in annual session April 14, and to be found on pages 3 to 6 of the 1947 Transactions, Dr. Grote said, in explanation of his recommendation:

"Let me remind you that, if we are really to defeat socialized medicine, we must do it not by simply standing pat and screaming it shall not pass but rather by correcting as nearly as possible any defects in our system of medical care, and at the same time we must keep the public on our side. Every survey in the nation shows the people are on our side, and I insist we must keep them on our side. They are for us if they know the truth. Nearly every state medical association in the Union has come to the same conclusion. California, New York, Michigan, Ohio, and others have pioneered in this field. The Michigan State Medical Society is spending one hundred thousand dollars annually on public relations activities. Each doctor in the state of Michigan is assessed twenty-five dollars per year for that activity alone. They have employed a full-time public relations counsel who is not a doctor but who works for the doctors. In that State they are spending thirty thousand dollars on advertising the truths about medicine and medical care.

"Here in Alabama, the need for a full-time, trained public relations counsel who works for our Association is a necessity. The President of the Association is swamped with calls for service. He cannot do the job that should be done and be in the active practice of medicine. The Board of Censors of our Association is carrying too great a burden. Too much is being done by too few. Most of our members little dream of the work that is done and should be done if we are to maintain our profession on the pinnacle of professions. It is axiomatic that we get out of any organization what we put into it, and I am pleading with the doctors of Alabama to put more money and more work into our Association in a cooperative effort."

In commenting on the President's recommendation (page 22 of the Transactions), the Board of Censors said:

"The Board appreciates that the medical profession everywhere has to do its part to-

ward improving medical care on both the state and national levels, and that the profession in Alabama should be no exception; that the Association needs a public relations officer to educate the profession and the people as to the best course to pursue in this endeavor, and if this aim is achieved the dues will have to be markedly raised ... the funds over and above dues now collected to be allocated to the Committee on Medical Care and Public Relations to be used by the Committee in activities approved by the Board of Censors."

"This undertaking," declared the Medical Society of the State of Pennsylvania, in commenting on its program of a similar nature, "is a project in which each must do his part, working as a team to inform the people of our desire to be of service to them. There must be no vain hope that a public relations program will be a cover for shortcomings or a substitute for good works, but rather the hope that the straightforward presentation of our service to the public will enlist their support of our activities."

And that goes for Alabama, too!

POSTGRADUATE SEMINAR AT MOBILE

The postgraduate seminar held at Mobile, September 24-25-26, was enthusiastically received and well attended by physicians in this area. The seminar was sponsored by the Committee on Postgraduate Study of the Medical Association of the State of Alabama and was given by the faculty of the Medical College of Alabama with the cooperation of the Mobile County Medical Society.

The seminar consisted of a total of 22 lectures and 4 round table conferences. Approximately 75 physicians attended each session and 25 physicians from the faculty of the Medical College participated in the program. Guest speakers were Dr. William J. Darby, Vanderbilt University, whose subject was "Nutritional Anemias," and Dr. Daniel C. Elkin, Emory University, who spoke on "The Diagnosis and Treatment of Aneurysm and Arteriovenous Fistula."

On Wednesday, September 24, the visiting faculty members of the Medical College held a smoker for all of the visiting doctors, and on Thursday, the 25th a dinner was given by the Mobile County Medical Society for all in attendance, both of which were well attended and thoroughly enjoyed.

The Committee on Postgraduate Study extends congratulations and thanks to all who participated in making the entire seminar so interesting and successful. It is believed that this is a step forward in the program of postgraduate instruction under the sponsorship of the Association and through cooperation of the faculty of the Medical College, and it is hoped that initiation of this program will result in increased interest in those that may be held in the future.

THIGPEN-CATER EYE HOSPITAL DEDICATED

The Thigpen-Cater Eye Hospital, commemorating Dr. Charles A. Thigpen and Dr.

Job T. Cater, of Montgomery, and built through the generosity of Dr. Thigpen, was dedicated on November 2 at Birmingham. The new Eye Hospital is a division of the Medical College of Alabama. Dr. Alston Callahan, Professor of Ophthalmology, is Director of the new unit.

SOUTHEASTERN ALLERGY ASSOCIATION

The Southeastern Allergy Association will meet in Richmond, Va. January 17 and 18, 1948 at the Jefferson Hotel. Details of the meeting may be had from Dr. Katharine MacInnis, Secretary, Columbia, South Carolina.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

AMERICAN MEDICINE'S RURAL HEALTH PROBLEM

J. Paul Jones, M. D.

Member, Committee on Rural Medical Service
American Medical Association

Camden, Alabama

More than 100 attempts have been made in state legislatures and five in Congress to establish a system of compulsory sickness insurance. Each time the American people have denied this regimentation of their personal liberties, knowing that compulsion is against the first principles of the American way of life. However, the causes of this type of compulsory cure—too few doctors, dentists and nurses in rural areas, and the high cost of good medical care, coming, as it usually does, all at once—are still with us.

The distribution of doctors, dentists, nurses and medical facilities in rural areas is far from ideal. A majority of the professional people serving these areas in Alabama are in their sixties, and they are rendering services to a large number of people scattered over a wide territory. Unless something is done to assure replacements, in 10 to 15 years we will be faced with the fact

that rural communities will have no professional personnel at all. These country doctors see people passing their offices every day enroute to physicians in larger towns. A young man, looking the rural situation over, finds little community spirit for the furnishing of medical facilities. He sees before him long hours of work, with people using him as a convenience, later going to city doctors. Finding educational and cultural opportunities to be meagre and professional contacts limited, he decides he would prefer to go to a populous place where he can use the skilled training he has worked so hard to procure.

This discouraging pattern of rural medical care cannot be changed over night. The changes that have been wrought in medical education, training and practice in the 20 or 25 years since this problem came to be recognized may mean that there will never again be a physician in every small town. The increasing use of clinics and hospitals, the cost of a medical education, and the need for a large investment in equipment to practice good medicine with necessary laboratory and nursing assistance, are factors that cannot be overlooked. Even though the convenience of medical care, of whatever character, receives more emphasis in the mind of the public than the efficiency of medical

Read before the Southeastern Regional Conference of the Council on Medical Service of the American Medical Association, Atlanta, October 8, 1947.

care, the location of a doctor in every small town would not solve the problem of efficient rural medical care. It is the well trained doctor, plus equipment, plus facilities reasonably accessible under modern methods of transportation, who will make this type of care available. In evaluating our needs, it does not seem wise to restrict our plans and problems to the county basis. It seems wiser to consider the trading center area, with good roads to and from it, the availability of ambulance service, and the presence of doctors, dentists and nurses in these areas. In this day of rapid transportation and good roads, we must not substitute in our minds convenience of medical services for efficient medical care. Before any rural county or rural area builds a hospital or clinic a careful study should be made of the site and the area to be served; the amount and quality of facilities available in the community or in nearby communities; the cost of the proposed construction; and the estimated cost of operation and maintenance. Not every county should build a hospital. They should only be built where the size of the population, the availability of medical and technical personnel, transportation, geographical factors, and methods of financing and service justify the establishment and indicate continuous and successful operation of such facilities. By careful planning a large hospital located in the trading center could be provided to serve a large percentage of rural people within reasonable driving distance. Clinics or medical service centers should be closely associated with a nearby large hospital. These centers could be provided with beds for emergency and obstetrical cases, staffed by nurses from the nearby hospitals, open to the local doctor, and with the medical profession of the trading center being available on a consultation basis. In this way the medical profession would exercise a control over the quality of medical care in that area. In our planning we should not overlook the problem of custodial and convalescent hospital care that is becoming more pressing every day. From the prepaid insurance standpoint, this is of great importance, because we are going to pay for this type of care to a lot of these people, some day.

We know that rural people will take out and keep up prepayment insurance when it

is offered them. The trouble at present seems to be that in offering this type of insurance (that pays only if confined to a hospital) an excessive hospital bed demand has been created, and many of our Alabama hospitals are already complaining of too few beds and too few nurses to handle the unusual demand. Again, as rural people take out this type of insurance, they call less often on the general practitioner, especially in areas where there is no hospital. This will shortly result in the doctor moving to a city where there are hospitals, leaving another community without a doctor.

We have organized an Alabama Health and Medical Care Council, inviting all agencies and individuals interested in better medical care to join and participate equally in an effort to gain the objectives of the medical profession and the farm groups. Unfortunately we have found very little interest manifested in the Council. We have participated individually and collectively in plans to establish hospitals in areas of greatest need, and have found that the public, when asked to vote additional taxes or bonds to establish these hospitals, has almost always voted adversely. This seems an unfortunate attitude, while they are at the same time well aware of the desperate hospital bed shortage in their areas. Our efforts will be continued along local and county lines, attempting to encourage people to join in planning for their medical care.

A campaign to educate the public in regard to the medical situation in rural and urban areas should include education as to the medical and hospital facilities available at home and in nearby communities; the social responsibility of the public in providing medical care; and the need for each community to take advantage of its own opportunities to increase its medical facilities. Rural communities should do all in their power to provide sufficient facilities for their local doctors so that they will not be forced to withdraw to larger cities where their practice will not be handicapped.

Although we have more professional nurses than at any time in the past, the supply has not been able to meet the demand; especially in bedside nurses. It is estimated that we have a deficit of 40,000 nurses in the nation. The enrollment in schools of nursing in 1946 was 31,000 while in 1938 it was

39,000. It is alarming when one realizes that this nurse shortage will become worse long before it becomes better; and presents a problem dangerous and tragic to hospitals, physicians and the public. "A recent poll of the American Surgical Association reveals that 16% of the hospitals in the nation have beds closed for lack of nurse personnel. Actually 33,000 beds in hospitals are not available. Moreover, many beds are filled with patients not being adequately cared for because of insufficient personnel."

Many reasons are given for the shortage of nurses: the increased qualifications necessary for the study of nursing, and the long term of education now in effect; demands for hospital service are greater than ever before; enrollment in schools of nursing are lower than formerly; the 40 hour week; the increase in governmental agency nurse demands, public health demands; and attraction of full-time positions in industry, public health, and governmental agencies.

"A study to determine the basic needs of nursing service has just been authorized by the National Nursing Council. Preceding approval of the study, nurses from hospitals and health centers throughout the country concluded a nine-day work shop study, evaluating the present day nursing services and the immediate need of thousands of additional nurses of several types. The approach was on the basis that it is not economically sound to prepare all nurses with the same basic curricula; and, after examination of the variations in abilities of those now called registered nurses, it was found that present and future demands for different types of nursing services call for relatively small numbers of professional women, supervisors, teachers, etc; and for a greater number of nurses prepared at less expense and in a shorter period of time." It goes without saying that by acts of omission the medical profession shares the responsibility for the situation that has arisen. It has not actively participated in the direction of the nursing schools. Trained practical nurses can be responsible for a major portion of bedside nursing. The establishment of shortened courses for bedside nursing should be arranged by hospital staffs and their nursing schools. The medical profession, hospitals, the public and the sick patient demand adequate nursing care.

Years of higher education are not required to supply it. There are opportunities for women who combine education at the university level with nurse training. Such people are not interested in bedside nursing, nor can the patient afford them. These nurses are our future supervisors, teachers and directors of schools of nursing.

Many hospitals at one time had nursing schools. The Alabama nursing profession, recognizing the need of bedside nurses and practical nurses, has secured legislative authority to open schools of or for practical nurses. Could not some program be started in these hospitals to train practical nurses for hospital and home duty, under supervision of the nursing profession and the doctors?

We all realize that the major problem facing the medical, dental and nursing professions today is the question of better distribution of adequate medical care. This depends on well qualified personnel and adequate diagnostic, clinic and hospital facilities. Provision of well trained personnel is primarily a responsibility of the allied professions; and the schools of medicine, dentistry and nursing in their plans for medical education. We need more men trained as dentists and as general practitioners, with resident training in the major specialties, and more nurses trained for bedside nursing and not as supervisors and administrators. Along with the training of these professional and allied groups, there must be an assumption on the part of the public of its responsibility for furnishing the facilities in which these trained professional groups may utilize their knowledge and skill. These go hand in hand. It will be of no great value to train professional personnel and fail to furnish medical facilities for them to work in; nor to build fine hospital and clinic facilities and not have well trained professional people to staff them.

1948 MEETING
ADMIRAL SEMMES HOTEL
MOBILE
APRIL 15, 16, 17

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

PRENATAL CARE FOR ALABAMA'S MOTHERS

This State is now experiencing the biggest "baby boom" in its history. More Alabama women and girls became mothers last year than in any previous year. A large percentage of these were first-time mothers, while others had gone through the glorious but hazardous experience of life-giving from one to a large number of times before.

This "baby boom" has important implications for many aspects of Alabama life. It means bigger trade and potentially larger profits for those who sell toys, baby carriages and infant wear. It means more patients for the state's pediatricians. It presents serious problems to our educational leaders, whose job it is to provide enough school buildings and kindergartens for toddlers. Indeed few activities are not affected, directly or indirectly, importantly or in small degree, by the current bumper "crop" of baby Alabamians.

As important as the arrival of these Alabama babies in such record-breaking numbers is, and will be, to the state's business and education leaders and others, it means infinitely more to their mothers. While to the average person a new-born baby is just another statistic, to the mother it is the flesh-and-blood realization of years of planning and hoping, months of anxious waiting and, in most instances, at least several hours of acute physical pain. To her and to the father it is of the greatest importance that this miracle of birth occur normally and that the health of both mother and child remain unimpaired.

Several factors contribute to determining whether a given birth will result in a sickly infant or one radiating youthful health and whether the mother will become a chronic invalid or take the birth in stride, with only a brief departure from her normal health and activities. The mother's general health, the family's economic status, the kind of work she does, the extent to which she is

free from worry and anxiety, her general emotional temperament—these and other things play a part in determining whether the outcome will be happy or distressing. More important than any of them, however, is whether the mother receives proper medical care and supervision during those vital nine months.

Whenever she has reason to suspect that her first, or another, baby is soon to be born, she should lose no time in going to a competent physician, first to ascertain if her suspicions are well founded and, second, if they are, to place herself under his care. If she is financially well-to-do or even in moderately good circumstances, she should go to her family physician. If her economic status is such that she does not feel that she can afford such care at her own expense, she should go to one of the public health maternity clinics operated by her County Health Department in cooperation with the State Department of Health.

On that first visit she will receive a complete physical examination and will also be asked a number of questions. She should be able, for instance, to tell him what forms of illness, including the common diseases of childhood, she has had; the kinds of operation she has undergone, especially those involving the pelvis or abdomen; whether her menstrual periods have been regular; whether this is her first or a subsequent pregnancy; and many other matters likely to have a bearing upon her present condition and its possible outcome.

The physical examination will probably be one of the most exhaustive of her life. Particular attention will be devoted of course to the examination of those parts of the body directly involved in childbirth, but hardly any organ or area having anything to do with general health will fail to receive a careful check-up. These will include the teeth, throat, tonsils, heart, thyroid, lungs, kidneys and organs of digestion. The blood pressure will be determined and recorded. The blood will be tested to be certain that unsuspected syphilis will not produce a stillbirth, blindness or deformity in the child

and possible permanent invalidism in the mother. If any unfavorable condition is revealed, the physician will begin corrective measures at once. For instance, if the blood test is positive—and a surprising number of innocently acquired cases are revealed in this way—the prospective mother is urged to visit the Mid-South Medical Center, in Birmingham, where, in a very short time, any but an advanced case is almost certain to be completely cured, without cost to the patient.

After completing his examination, the physician will give the expectant mother advice regarding the care she should take of herself. He will probably recommend a visit to her dentist. This is to be certain that her teeth will be able to do their work efficiently and to spare her body unnecessary strain due to poor nutrition or digestion or to toxins disseminated by abscessed areas. He will advise her when and how often to return to him for other examinations, so that he may be sure that those organs which were found to be normal and healthy on that first visit remain so and that the effectiveness of corrective measures used for abnormal conditions may be checked. His own work load and other conditions may affect this schedule, but probably he will ask her to return about once a month during the next six months, about every two weeks during the next two months and every week during the next—or the ninth—month. He will probably urge upon her the wisdom of making these return visits as scheduled, unless there is an excellent reason for failing to do so; for, he will point out, many changes can occur at such a time, and they occur rapidly. And he will leave the friendly and wise admonition to let him know immediately if the patient herself observes or experiences any marked change in her feeling or appearance.

Each subsequent examination will be less exhaustive but sufficiently thorough to enable the physician to obtain a clear picture of how the patient is getting along. In addition to a general physical check-up, he will ascertain whether her blood pressure is still within normal range, obtain a urine specimen for a laboratory test to be sure that her kidneys are still functioning properly and keep an eye upon her weight. It goes without saying that she should conscientiously

follow the advice he gives her. As the anonymous author of a booklet issued by the U. S. Children's Bureau points out: "She must remember that she is like an athlete in training for a race or a swimming contest, who lives according to rules that have been worked out to give him the best possible preparation for the test that he will have to meet. Her test is confinement, and the goal is health for the baby and herself."

Diet is especially important during pregnancy. It should be remembered that the prospective mother must provide nourishment not only for herself but also for the bundle of life which is coming into being inside her body. Moreover, she must not only nourish that unborn child: she must also provide the material it needs to build itself. So she must really eat for two, and the amount of food which is sufficient to keep a normal person healthy is likely to prove far too little for the body-building and health-preserving needs of mother and unborn baby.

Those all-important building materials for the developing baby may be provided by any number of everyday foods which are in good supply and fairly inexpensive. However, the prospective mother needs to use care in selecting those which are most suitable. She needs plenty of proteins, which means plenty of meat. She needs calcium and phosphorus to build sturdy bones, and that means milk. She needs to keep her intake of iron and the essential vitamins at a high level. And of course she needs to be sure that her total caloric intake is what it should be.

Now let us consider some of the food products that provide the important elements needed.

At the top of the list is milk, known as "the most nearly perfect food." It has earned that title because it contains an unusually large number of important food elements, including those needed for proper muscular development, the calcium and phosphorus needed for the growing of bone and teeth and some, but not all, of the most useful vitamins. Milk has the advantage of giving the consumer a choice between taking it as a beverage or a constituent of any number of solid-food dishes. It is advisable, however, for the expectant mother to drink at least a part of the amount she consumes

every day. To be on the safe side, she should use only that which has been pasteurized. If pasteurized milk is not to be had, she should boil the raw milk she obtains from the dairy or grocery store. Soups, puddings, sauces and custards are only a few of the many foods composed largely of this nutritious product. The milk intake need not be limited to fresh milk of course. When that is not available in the needed amounts, evaporated milk, diluted with its own volume of water, and dried whole milk, prepared according to directions, serve the purpose practically as well. Buttermilk or skim milk may even be used as a substitute for fresh whole milk. However, it should be supplemented with butter or fortified margarine to keep up the intake of the important vitamin A, unless the physician advises that this element be supplied otherwise, as, for instance, by eating extra amounts of green leafy or yellow vegetables.

Whole grains are rich in certain minerals and vitamins which are especially helpful to the expectant mother, and they also tend to maintain bowel regularity. So it is well for her to limit her bread and cereal intake largely to those made from whole grains or those which have been only lightly milled. However, bread made from finely milled white flour, but enriched, is now on the market, and the same is true of enriched breakfast foods. If that has been done to the food the expectant mother eats, she need not worry about any loss of food value through milling.

Other foods which should be consumed in unusually large quantities by the expectant mother are green leafy and yellow vegetables, tomatoes (fresh or canned), raw salad greens, white and sweet potatoes, root vegetables, cabbage, oranges, grapefruit, berries, canned orange and grapefruit juice and melons. Iodized table salt should be used instead of the regular kind, so as to prevent the thyroid from becoming enlarged and starting a goiter. In some regions where there is a decided lack of iodine in the soil and water, the physician may prescribe the taking of iodine in some other form in order to supply the amount needed by a particular patient. However, except in the form of iodized salt, iodine should never be taken by anyone—prospective mother or anyone else—except under a physician's direction.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND DEATHS FROM CERTAIN IMPORTANT CAUSES FOR JULY 1947 AND COMPARATIVE RATES FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During July 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	7472	**	**	29.3	25.4	25.3
Stillbirths	231	**	**	30.0	26.6	24.5
Deaths, exclusive of stillbirths	1923	1065	858	7.5	7.5	8.2
Infant deaths:						
Under one year	222	113	109	29.7	34.9	40.2
Under one month	173	92	81	23.2	27.5	23.4
Typhoid and paratyphoid 1, 2	2	2		0.8	0.4	1.2
Epidemic cerebrospinal meningitis 6	3	3		1.2		1.6
Scarlet fever 8	1	1		0.4		
Whooping cough 9	10	4	6	3.9	0.4	3.2
Diphtheria 10					0.8	
Tuberculosis, all forms 13-22	74	34	40	29.0	32.9	39.6
Malaria 28	3	1	2	1.2	1.2	4.0
Syphilis 30	16	3	13	6.3	12.6	13.9
Influenza 33	6	2	4	2.4	1.6	3.2
Measles 35					1.2	0.4
Poliomyelitis 36					1.2	0.4
Encephalitis 37	1	1		0.4	0.4	0.4
Typhus fever 39	3	3		1.2	1.2	2.0
Cancer, all forms 45-55	191	126	65	74.9	71.0	86.4
Diabetes mellitus 61	22	15	7	8.6	9.8	8.7
Pellagra 69	4	2	2	1.6	1.6	4.0
Alcoholism 77	2	1	1	0.8	1.6	0.4
Intracranial lesions 83	207	116	91	81.2	78.8	86.4
Diseases of the heart 90-95	431	268	163	169.0	165.1	137.5
Diseases of the arteries 96-99	24	16	8	9.4	11.0	7.5
Bronchitis 106	4	2	2	1.6	1.2	1.2
Pneumonia, all forms 107-109	55	24	31	21.6	22.7	31.7
Diarrhea and enteritis (under 2 years) 119	10	5	5	3.9	5.5	12.7
Diarrhea and enteritis (2 and over) 120	4	2	2	1.6	1.2	1.2
Appendicitis 121	10	7	3	3.9	4.7	6.7
Hernia and intestinal obstruction 122	11	5	6	4.3	7.1	9.9
Cirrhosis of the liver 124	12	10	2	4.7	2.4	1.6
Nephritis, all forms 130-132	142	77	65	55.7	48.2	61.0
Diseases of puerperal state 140-150	20	7	13	26.0	25.5	25.9
Puerperal septicemia 140, 142a, 147	2	1	1	2.6	12.0	10.7
Suicide 163-164	15	10	5	5.9	4.7	5.1
Homicide 165-168	40	13	27	15.7	12.6	13.9
Accidents, all types 169-195	132	84	48	51.8	68.6	62.6
Motor vehicle accidents 170	51	37	14	20.0	27.4	14.7
All other known causes	322	196	126	126.3	123.4	141.4
Ill-defined and unknown causes 199-200	146	25	121	57.3	47.1	59.0

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the July report of the years specified.

**Not available.

BUREAU OF LABORATORIES**H. P. Sawyer, M. D., Director****SPECIMENS EXAMINED****September 1947**

Examination for diphtheria bacilli and Vincent's	491
Agglutination tests (typhoid, Brill's and undulant fever)	1,234
Typhoid cultures (blood, feces and urine)	967
Examinations for malaria	1,006
Examinations for intestinal parasites	2,754
Serologic tests for syphilis (blood and spinal fluid)	27,923
Darkfield examinations	33
Examinations for gonococci	3,266
Examinations for tubercle bacilli	2,335
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	82
Water examinations	1,574
Milk and dairy products examinations	2,739
Miscellaneous	407
Total	44,741

BUREAU OF PREVENTABLE DISEASES**W. H. Y. Smith, M. D., Director****CURRENT MORBIDITY STATISTICS****1947**

	Aug.	Sept.	E. E.* Sept.
Typhoid	6	7	35
Typhus	27	13	59
Malaria	289	200	883
Smallpox	0	0	0
Measles	37	29	28
Scarlet fever	8	15	78
Whooping cough	130	111	66
Diphtheria	14	30	112
Influenza	23	35	76
Mumps	20	19	23
Poliomyelitis	10	8	15
Encephalitis	1	1	2
Chickenpox	2	0	6
Tetanus	5	3	6
Tuberculosis	270	193	283
Pellagra	2	2	11
Meningitis	7	4	6
Pneumonia	67	57	105
Syphilis	1947	2619	1399
Chancroid	13	22	12
Gonorrhea	862	670	605
Tularemia	0	0	0
Undulant fever	10	10	8
Amebic dysentery	1	1	0
Cancer	363	256	0
Rabies—Human cases	0	0	0
Positive animal heads	26	28	0

As reported by physicians and including deaths not reported as cases.

*E.E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION**Arthur N. Beck, M. S. in S. E., Director****LARGE INCREASE IN WATER-WORKS CONSTRUCTION****Contributed by****C. W. White, M. S. in S. E.****Prin. San. and Pub. Health Eng.**

Construction of new water-works systems, and improvements to existing systems, was

greatly accelerated during the last few months of 1946 and during the entire year of 1947. During the hostilities the water-works management cooperated in keeping the essential or critical materials to a minimum. Only the materials needed to assure an adequate and safe water were used, so quite a number of plants were in need of additions to their sources of supply. The municipalities in Alabama are growing as new industries are being developed and new houses are being constructed. These new customers have created new peak demands on the public water supplies.

It has been difficult to secure materials for the construction and the owners have experienced considerable delays in completing their proposed improvements. Even under the shortages and the high cost of materials, as well as labor, the state has experienced major improvements to its water-works.

The following communities have recently constructed new complete water-works systems and their people are now being served by public supplies under the supervision of the State Health Department. They are: Carrville, Tallapoosa County; Center Point, Jefferson County; Eden, St. Clair County; Eclectic, Elmore County; Graysville, Jefferson County; Jemison, Chilton County; Rockford, Coosa County; and Roebuck Plaza, Jefferson County.

There are a number of other communities that have made plans to construct new systems and have prepared engineering reports showing the feasibility of such systems. They have also submitted final plans and specifications for the proposed work. The following communities have received approval of the proposed systems, and permits for the construction have been issued by the State Health Department. They are as follows: Akron, Hale County; Austinville, Morgan County; Dozier, Crenshaw County; East Brewton, Escambia County; Five Points, Chambers County; Goshen, Pike County; Gilbertown, Choctaw County; Helena, Shelby County; Pine Hill, Wilcox County; Repton, Conecuh County; Thomaston, Marengo County; Wadley, Randolph County; and Waverly, Lee County.

In order to keep abreast of the increased population and demands placed upon the water-works, the following towns have con-

structed new wells: (1) Andalusia, Covington County; (2) Ariton, Dale County; (3) Clayton, Barbour County; (4) Dothan, Houston County (two wells); (5) Fort Deposit, Lowndes County; (6) Georgiana, Butler County; (7) Louisville, Barbour County; (8) Monroeville, Monroe County; (9) Oneonta, Blount County; (10) Opp, Covington County; (11) Ozark, Dale County; (12) Samson, Geneva County; and (13) Scottsboro, Jackson County.

In addition to the wells completed, the following municipalities have wells under construction to supplement their supplies. They are: Brewton, Escambia County; Florala, Covington County; Guin, Marion County; Jackson, Clarke County; and Linden, Marengo County.

Alexander City constructed a new and modern water filtration plant with a capacity of two million gallons per day. Prior to the construction of this plant, the city was dependent on the water supply owned and operated by the Russell Manufacturing Company. Due to the expansion at the mill and the growth of Alexander City, it became necessary for the city to supply its own system by a new and adequate source.

The Birmingham Water-Works Company has increased its Birmingham Station water filtration plant from the capacity of 6.0 m.g.d. to a capacity of 12.0 m.g.d. This increase now gives the Birmingham area a domestic water supply with a capacity of 55.0 m.g.d. as the Shades Valley Plant has a capacity of 43.0 m.g.d. This supply has by far the largest system in the state and it serves the surrounding communities as well as a number of unincorporated mining villages. Mobile with its plant capacity of 20.0 m.g.d. is next in size to the Birmingham system.

The City of Opelika completed in 1945 its dam on the Sougahatchee Creek to impound a reservoir for its new source of supply. The new water filtration plant with a capacity of 3.0 m.g.d. was completed in 1947. Due to normal growth of the city and industrial expansions, and the limited supply of the spring, an additional source of supply was needed.

The water filtration plants in Hartselle and Livingston became inadequate to meet their demands so these plants were doubled in size. The iron removal plant in Vernon

was tripled in size to meet its increased demands.

The City of Tuscaloosa was able to put its addition to the filtration plant in service the day that the University of Alabama students returned from vacation. This prevented a water shortage in the city and the surrounding institutions and industries, although the storage of finished water was very low. The plant's capacity was increased from 6.0 m.g.d. to 9.0 m.g.d. This increase will be adequate for a time. However, it appears that another increase in capacity and other major improvements will be needed soon.

The City of Cullman was not so fortunate as Tuscaloosa as its additions have been delayed in construction and it has suffered serious water shortages. When the addition of one million gallons per day is completed the city should have adequate plant capacity for some time as the plant's capacity will be increased three times its former capacity of one-half million gallons per day.

The Avondale Mills' public water supply in Pell City serves the mill village as well as the cotton mills with domestic water. Due to plant expansion and increased personnel, as well as the limited spring supply, it became necessary for the owners to develop a new and adequate source of supply. Wate's Lake was developed as the new source of supply. The pumping and chlorinating equipment has been installed and the new mains and elevated tank have been constructed and placed in service. This supply should now be adequate for a number of years.

The City of Sylacauga has completed new mains from its filtration plant through the business area to a new elevated tank. This distribution system improvement also acquired a new booster pumping station. Plans have been made to raise the dam on the Tallassee hatchee Creek to increase the raw water storage and to construct additions to the filtration plant.

The City of Roanoke completed its new settling basin which was designed to give six hour detention for two filters instead of one which had been in service. This gives the new filter plant twice the capacity and should be adequate for a number of years. The small branch used as a source of supply appears to be inadequate and arrangements

should be made to locate a new raw water source.

The water filtration plant at Russellville was increased in capacity by constructing a new settling basin and two new filter units. This doubled the capacity of the plant so that it is now possible to filter approximately 1.0 m.g.d.

In addition to these improvements to the public water supplies, there has been a number of miles of main extensions made to serve new homes and small industries. The following are a few of the municipalities, that we know of, that have made major ex-

tensions; we are sure there are others. They are: Atmore, Bessemer, Birmingham, Montgomery, Tuscaloosa, Talladega, Gadsden, Decatur and Mobile.

Considering the shortages of materials needed for water-works improvements, we feel that Alabama has received its share of construction in this field. We know that there is a considerable amount of improvements desired and in some cases critically needed to serve adequately the people in the state with a safe water; however, we are proud that the public water supplies have accomplished so much during the last year.

BOOK ABSTRACTS AND REVIEWS

A History of the American Medical Association, 1847-1947. By Morris Fishbein, M. D. With the Biographies of the Presidents of the Association by Walter L. Bierring, M. D., and with Histories of the Publications, Councils, Bureaus, and Other Official Bodies. Cloth. Price, \$10.00. Pp. 1226. Philadelphia and London: W. B. Saunders Company, 1947.

Many of us, accustomed as we are to criticizing our Government and our elected officers, have, perhaps, also been critical of the American Medical Association of which each of us is a member. In recent years we have been inclined to think that Morris Fishbein was the whole American Medical Association and to resent somewhat his speaking for us. If we would take the trouble to read the History of the American Medical Association which has been edited and largely written by Morris Fishbein, we are likely to have a much better understanding of the work of the Association and of Doctor Fishbein's relation to it.

The first section of the book is devoted to a year-by-year outline of the activities of the Association which at times appear to be fumbling and bungling but, nevertheless, proceed with increasing momentum toward a definite ideal of offering to the people of the United States the best medical care in the world. Throughout this portion of the book, one sees the beginning of the campaigns for the reduction of Fourth of July accidents, the control of ophthalmia in the newborn, the exposing of quacks and patent medicines, the development of various specialized sections and the birth of various special journals such as the Archives of Surgery and Archives of Internal Medicine.

Doctor Walter Bierring then presents biographies of the presidents of the American Medical Association during the one hundred years of its existence. Among these distinguished leaders of our Association appear such names as Samuel Gross, James Marion Sims, Austin Flint, W. W. Keen, both of the Mayos, William C.

Gorgas, William H. Welch, John B. Murphy, Abraham Jacobi, George E. de Schweinitz, William Sydney Thayer, Frank H. Lahey, and James Paullin. It is with pride that the reviewer found the names of five Alabamians who served as presidents of the Association—William O. Baldwin, James Marion Sims, John A. Wyeth, William C. Gorgas and, more recently, James M. McLester.

The remainder of the book deals with the various activities of the Association containing reports of the Board of Trustees, the Treasurer, the Councils on Pharmacy and Chemistry, Medical Education and Hospitals, Food and Nutrition, and Industrial Health. There are reports of the Judicial Council; of the Council on Legal Medicine; of the Bureaus of Investigation and Information, and of Exhibits and Medical Economics. There are descriptions of the work of the Woman's Auxiliary and of the history of the various special publications, including the Archives, the Quarterly Cumulative Index Medicus and the American Medical Directory.

Morris Fishbein has been editor of the Journal for a period of twenty-five years. During that time legal suits involving over three and a half million dollars have been filed against the American Medical Association but little, if any, money has been paid out by the Association as a result of the suits. The suits began to be filed about one year after Morris Fishbein assumed his editorship and one cannot help but be impressed by the fact that only a cantankerous individual or a true crusader can get involved in so many difficulties. If you have been inclined to feel that Fishbein deserves the first designation, you should out of fairness read the story of these suits and learn how much has been accomplished toward removing from the American scene a large number of quacks, many of whom are criminals, and an even larger number of harmful drugs which were formerly sold to a gullible public.

The book is a long one of 1200 pages and it does not make easy reading, but as a reference work

for those who wish to know what the American Medical Association is doing and why it is doing it, this book is the only one to which they may go for information.

The reviewer feels a very much deeper respect toward the Association than he ever felt before and is also convinced that the Association has been fortunate in having as one of its leaders a man like Morris Fishbein whose ideals are high though sometimes misunderstood by the general profession, and whose fearlessness has seen him through years of trouble and of eventual victory in a campaign which has certainly been for the good of the people of the entire country.

Clarence K. Weil, M. D.

The Practical Nurse. By Dorothy Deming, R. N., B. A., Consultant in Public Health Nursing, Merit System Unit, American Public Health Association; formerly General Director, National Organization for Public Health Nursing. Cloth. Price, \$3.00. Pp. 356. New York: Commonwealth Fund, 1947.

The shortage of professional nurses and the increased interest of the public in planning for more adequate care of the sick make this discussion of the practical nurse timely. Miss Deming went to a wide variety of places and visited many kinds of agencies; and she talked with hundreds of physicians, professional nurses, practical nurses and lay people in order to present facts as well as opinions.

Miss Deming describes the functioning of the practical nurse in the past and in the present. An index of the recognition and use of practical nurses in our total health program may be noted in the following statement: "The establishment of 49 non-profit schools for training practical nurses and legislative control of their practice in 18 States, one territory (Hawaii) and one city (Detroit) have strengthened the confidence of employers and raised the standards of service."

Miss Deming discusses fully the functions of the practical nurse, her selection, preparation and supervision.

The need for improvement in employment machinery to eliminate confusion and hazard to the sick is discussed in relation to registries.

Nurses and physicians employing practical nurses, operating practical nurse schools or contemplating opening schools for practical nurses will be very grateful to Miss Deming for the list of references accompanying each chapter.

Pearl Barclay, R. N., B. S.

The American Illustrated Medical Dictionary. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc; with Pronunciation, Derivation and Definition. Twenty-first Edition. By W. A. Newman Dorland, A. M., M. D., F. A. C. S., Lieut. Col. M. R. C. U. S. Army; Member Committee on Nomenclature and Classification of Diseases of the A. M. A.; Editor of American Pocket Medical Dictionary. With the Collaboration of E. C. L. Miller, M. D., Medical College of Virginia. Cloth.

Price, \$8.00 without thumb index; \$8.50 with thumb index. Pp. 1,660, with 880 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

For forty-seven years the American Illustrated Medical Dictionary has been used by the medical profession and, during that time, it has earned a respect which puts it in a class with Webster's International Dictionary. The book does not claim to be an encyclopedia. Definitions are brief but clear and concise. It contains, in addition, a large number of anatomic and clinical tables, tests, staining methods, and methods of treatment which are of practical daily use.

The new edition contains new materials in the fields of tropical and aviation medicine, medical zoology and mycology; biochemistry and pharmacology, including antibiotics, enzymes and endocrines. It also includes new terms applicable to the use of radioactive isotopes of the chemical elements.

A medical dictionary is not only a source of much valuable information, but it also serves the means of checking the accuracy of one's spelling when writing scientific articles, and it is of inestimable value in the hands of a doctor's secretary.

Clarence K. Weil, M.D.

Laboratory Manual of Microbiology for Nurses. By Elizabeth A. Gill, B. A., R. N., Instructor in Nursing, Department of Nursing, College of Physicians and Surgeons, Columbia University, New York; and James T. Culbertson, Ph. D., Professor of Bacteriology and Parasitology, University of Arkansas School of Medicine, Little Rock, Arkansas. Formerly Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York. Paper. Price, \$1.50. Pp. 116. New York: G. P. Putnam's Sons, 1947.

Taken as a whole, this laboratory manual impresses the reviewer as being well organized for preclinical students. The transition from the study of the non-pathogens through the pathogens is so arranged that it not only holds the interest of the students but proves groundwork for their future courses in pathology and public health nursing.

In the opinion of the reviewer, microbiology forms the basis for the student's introduction to, as well as a follow-through of, preventive medicine. In this guise, this laboratory manual appears to be a very worthwhile means for linking etiology, transmission and general preventive measures in the minds and consciousness of the student nurses.

Kathleen Knippel, B. A., M. T.

A Textbook of Clinical Neurology. With an Introduction to the History of Neurology. By Israel S. Wechsler, M. D., Clinical Professor of Neurology, Columbia University, N. Y.; Neurologist, the Mt. Sinai Hospital; Consulting Neurologist, Montefiore Hospital and Rockland State Hospital, N. Y. Sixth Edition. Cloth. Price, \$8.50. Pp. 820, with 162 illustrations. Phila-

delphia and London: W. B. Saunders Company, 1947.

This is the sixth edition of Wechsler's practical textbook on neurology. The first edition appeared in 1927 and the fifth edition was published in 1943. During these years, there has been a considerable advance in the field of the psychoneuroses and, while the author has not included the subjects of psychiatry and endocrinology, he has devoted considerable space to the psychoneuroses, including the more recent advances.

Over one hundred pages are devoted to the subjects of history taking and the neurologic examination. Descriptions of individual diseases are brief and concise, and illustrated by photographs of pathological material and diagrams of the involved nerve paths. There are a few photographs of typical cases and the subject of neuroanatomy has been left to other authors. The textbook is based on personal teaching and clinical experience. It is an excellent text for medical students, and though it appears somewhat lacking in detail for the specialist in neurology, it should appeal to those physicians who work in communities which have no specialist in this field and who are thrown entirely on their own judgment as far as the matter of a neurologic diagnosis is concerned.

Clarence K. Weil, M. D.

Internal Medicine in General Practice. By Robert Pratt McCombs, B. S., M. D., F. A. C. P., Assistant Professor of Medicine and Director of Postgraduate Teaching, Tufts College Medical School; Senior Attending Physician, The Joseph H. Pratt Diagnostic Hospital; Diplomate of the American Board of Internal Medicine. Second Edition. Cloth. Price, \$8.00. Pp. 741, with 122 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

In this volume the author has presented an outline of the practical clinical aspects of internal medicine, stressing the early differential diagnosis of the most common clinical manifestations. Though written primarily for the general practitioner, it should appeal equally to the internist and to those of our surgical colleagues who prefer making their diagnoses before operation rather than during operation. The author has integrated physiologic principles with the clinical manifestations of disease, yet this is not a theoretical work but, on the contrary, an extremely practical one.

The first edition was published in 1943 and the popularity of the volume resulted in its being reprinted in 1944 and 1945. The second edition with an increase in size of about fifty pages has just appeared on the press. There are new chapters on psychiatric disorders and vascular diseases of the extremities. The subject of chemotherapy has been completely rewritten. New information not contained in the previous edition includes lumbosacral sympathectomy in selected cases of hypertension, rice diet in hypertension in certain kidney diseases, high protein diets and protein hydrolysates in malnourished states, folic acid in macrocytic anemias and sprue, serum albumen in circulatory failure and nephrotic states, gamma globulin in the prophylaxis and treatment of measles and infectious hepatitis, chloroquin in malaria, para-amino-benzoic acid in rickettsial diseases, penicillin in syphilis and other infectious diseases, thiouracil and propylthiouracil in hyperthyroidism, estrogen therapy and castration in cancer of the prostate, benadryl and pyribenzamine in allergic disorders, cytochrome-C in anoxic states, tridione in psychomotor disorders and heparin and dicumarol in vascular thrombosis.

This book has the reviewer's enthusiastic endorsement.

Clarence K. Weil, M. D.

AMERICAN MEDICAL ASSOCIATION NEWS

42,000 MORE NURSES NEEDED TO MEET CURRENT DEMAND—HYGEIA

DR. FISHBEIN SUGGESTS TRAINING OF MORE PRACTICAL NURSES FOR ORDINARY BEDSIDE NURSING

Almost 42,000 more nurses are needed to meet the current nursing shortage and probably at least 60,000 will be needed to meet increasing demands, according to an editorial by Morris Fishbein, M.D., in the current issue of *Hygeia*, health magazine of the American Medical Association. As Dr. Fishbein sees it, the training of more practical nurses to take over a large part of ordinary bedside nursing may be the answer to the major portion of the problem.

Dr. Fishbein writes:

A survey made by the American Hospital Association indicates that the number of nurses necessary to supply the needs of the hospitals and the people of the United States is 360,000. Over 90,000 nurses are needed for private duty nursing in which one nurse takes care of one patient. At present almost 42,000 nurses are needed to meet the shortage that prevails; probably at least 60,000 are needed promptly to meet increasing demands that will come with new hospitals and new services for nurses.

Various reasons have been alleged to be responsible for the existing shortage. Before the war nurses worked in many in-

stances a 12 hour day for six days a week. Now throughout much of the United States they work eight hours a day five days a week. This alone would mean almost twice as many nurses to meet the same needs.

In 1940 there were 1,226,000 hospital beds. By 1945 the number had increased to 1,738,000. New veterans' hospitals are in process of construction; under the Hill-Burton Act there will be many more hospital beds provided for the civilian population. In 1940 about 10 million patients entered the hospitals of the United States. In 1945, 16 million patients entered the hospitals. No doubt much of the increased demand is associated with the rapid spread of hospitalization insurance.

During 1945 a careful survey was made of medical and public opinion regarding the profession of nursing. The general belief seemed to prevail that the nursing profession is desirable but that it offers too little reward to those who practice it and too high a cost to those who need it. This is like the situation in which an irresistible force meets an immovable object. How to reconcile the two aspects of this situation is an exceedingly difficult problem.

The profession of nursing today includes far more than just taking care of the sick. Nurses have positions involving administrative responsibilities. They are concerned with education. The career of a nurse is considered suitable preparation for specialized training in physical therapy, public health and such fields as psychiatric, orthopedic, surgical and obstetric nursing. The demand for properly qualified nurses is so great that a girl who completes her education in nursing need never be without work once she has secured a license to practice.

The suggestion has been made that the shortage be overcome by the training of male nurses, but the point of view is well established that nursing is primarily a woman's profession. Competition from men will hardly be a factor for a good many years.

The minimum educational requirements of most schools of nursing is graduation from high school. Some nursing schools require one or more years of college work. In general students are admitted only when they have been in the upper third of the class. The preferred age is 20 to 25 years

but 18 years of age is considered acceptable in a good many schools. Thirty-five is considered the upper limit. Some schools of nursing offer a combination four or five year program which includes a diploma for nursing and a college degree. These schools will admit high school graduates at 17 years of age.

The great number of nurses who get married soon after entering the profession is an indication that this is one profession which is excellent preparation for marriage. The girl who is trained as a nurse has several advantages over girls in other occupations when it comes to contact with the susceptible male.

Much discussion has been going on in medical and nursing circles as to the desirability of educating more practical nurses. The excellent work the nurses' aides did during the war has emphasized this possibility. The criticism is made that professional nurses have raised their educational standards and are getting far away from bedside nursing. In Michigan the State Board of Education in cooperation with medical and nursing organizations has established six practical nurses' training centers to educate such nurses. For a number of years Detroit has had a similar project. These practical nurses are recruited from the senior students in high schools. The teachers are registered nurses on high school faculties. Practical nursing will be a part of the vocational educational system. Standards for practical nursing systems will be established. The leaders who are developing this plan assert that nurses of this type will be able to do from 80 to 90 per cent of the ordinary bedside nursing in hospitals. This may be the answer to the major portion of the problem.

SEVEN ORGANIZATIONS URGE NATIONAL RABIES CONTROL PROGRAM

Rabies in the United States is serious enough to justify a rabies control program on a national basis, according to representatives of seven organizations whose recommendations appear in *The Journal of the American Medical Association* of November 22.

The organizations are the American Public Health Association, the American Medical Association, the U. S. Public Health

Service, the Bureau of Animal Industry of the U. S. Department of Agriculture, the U. S. Livestock Sanitary Association, the American Animal Hospital Association and the American Veterinary Medical Association. They believe that:

—The federal government should participate in means for the control of rabies through cooperation with the states, contributing funds and personnel.

—Rabies in man is generally reportable to local and state health authorities, but it should also be required that all cases of animal rabies be reported by states to a central federal agency for analysis and distribution.

—Prime consideration must be given to adequate facilities for the diagnosis of rabies, mass immunization of susceptible animals, particularly dogs, and control of animals capable of transmitting the disease.

CORONARY ARTERY DISEASE FOUND IN MAJORITY OF DIABETICS AT DEATH

Persons suffering from diabetes are twice as likely to have coronary artery occlusions as are nondiabetic men and eight times as likely as are nondiabetic women, according to an article in the current Archives of Internal Medicine, published by the American Medical Association.

The writers are Samuel Stearns, M.D., assistant in medicine at Tufts College Medical School and associate in medicine at Beth Israel Hospital, Boston; Monroe J. Schlesinger, M.D., assistant professor of pathology at Harvard Medical School and pathologist at Beth Israel Hospital, and Abraham Rudy, M.D., late head of the Diabetic Clinic of the Medical Service of the Beth Israel Hospital.

Employing an improved technic in a postmortem study of the hearts of 50 unselected diabetic patients at Beth Israel, the three doctors found some arteriosclerosis in all of them and "functionally significant" coronary artery disease in a larger number than would be expected from previous studies: 37, or 74 per cent. This last figure was in contrast to 37 per cent in 400 consecutive nondiabetic patients of approximately the same average age.

A coronary artery occlusion is said to be present when a clot has formed in a branch of the coronary arteries which supply blood

to the heart muscle. With the circulation to this particular area of the heart obstructed by the clot, death of some of the heart's tissue occurs. Such occlusions, either fresh or old, were found in 32 (64 per cent) of the 50 diabetic hearts and as frequently in women as in men; similar occlusions were found in only 23 per cent of the 400 controls, occurring in 31 per cent of the nondiabetic men and in but eight per cent of the nondiabetic women.

The severity of the coronary arteriosclerosis was found to be definitely related to the duration but not to the severity of the diabetes.

ORGANISM CAUSING DIPHTHERIA RESISTS PENICILLIN AND STREPTOMYCIN

In the November 22 issue of The Journal of the American Medical Association three Army doctors report the case of a diphtheria patient who was treated with large doses of penicillin and streptomycin "without apparent effect on the course of the disease or on the persistently positive throat cultures." This is significant, according to the writers, because other medical reports have indicated that the organism causing diphtheria is sensitive to both antibiotics.

With an apparent increased incidence of diphtheria in many sections of the country, in cases of severe inflammation of the throat "one should not be lured into a false sense of security" by such reports, the doctors warn. They are Lieutenant Colonel Weldon J. Walker, Captain Franklin C. Massey and Captain F. Keshvar Mostofi, all with the Medical Corps of the United States Army and all from the Medical and Laboratory Services of the Madigan General Hospital, Tacoma, Washington.

In the case they mention the patient's throat condition was not accurately diagnosed until he grew worse after having been given large doses of penicillin. Four days after the onset of the illness throat cultures were made, and they proved positive for the bacillus of diphtheria. The patient was given diphtheria antitoxin and the penicillin dosage was continued. The cultures remained positive, however. Finally, when the patient was near death, streptomycin was given instead of penicillin. "There was no clinical or bacteriologic response to the administration of either penicillin or streptomycin," the doctors write.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

January 1948

No. 7

HEART DISEASE IN ALABAMA

OLIVER WELCH, M. D.
Chief, Medical Service

And

CHARLES PORTER, M. D.
Resident in Medicine
Employees' Hospital
Tennessee Coal, Iron and Railroad Company
Fairfield, Alabama

It is an established fact that heart disease is the leading cause of death in this country. In 1944 it accounted for 418,000 deaths, or about 30% of all deaths.¹ As a cause of illness it is even more important, and a recent national health survey² estimated that about 8,000,000 persons in the United States are suffering from heart disease. Master³ places this figure at about 4,000,000 and White⁴ estimates that about 2% of the population of the northern part of the United States have heart disease of a degree sufficient to produce symptoms and signs. It would appear that the problem of heart disease is the most important public health problem in the country today.

Cardiovascular disease is really a number of wholly different diseases, related only anatomically, with reference to the system of the body which they affect, and while it is important to know accurately the total

incidence of heart disease, it is even more important to know the absolute and relative frequency of the various types of heart disease. Doctor White⁴ states in the first edition of his book on "Heart Disease" published in 1931—and it is significant that this statement appears unchanged in the current edition—that "accurate information about the community incidence of heart disease is as yet scarcely available anywhere in the world . . . We possess scattered data of small or limited scope or of uncertain reliability from a number of sources, data which are largely incomplete or otherwise unsatisfactory." A number of excellent papers have appeared from clinics in this country and abroad giving the relative incidence of various types of heart disease among cardiac patients studied in these clinics. While these papers have the great value that most of them deal with living patients, they have not attempted to state the absolute incidence with reference to a unit of population.

Mortality statistics as published by the U. S. Bureau of the Census offer a "poor best" source of information as to the absolute incidence of heart disease. These figures contain many errors and inaccuracies: A patient with heart disease dying with terminal pneumonia may be reported as a death due to pneumonia; in the tabulation of statistics one disease may be given precedence over another and a death actually reported as due

Read before the Association in annual session, Birmingham, April 14, 1947.

Dr. Welch, the senior author, died on October 21, 1947.

1. United States Bureau of the Census: Vital Statistics in the United States, 1944.

2. National Health Survey: The Magnitude of the Chronic Disease Problem in the United States. Preliminary Reports, Sickness and Medical Care Series, Bull. No. 6, 1938.

3. Master, A. M.: Incidence of Acute Coronary Artery Occlusion, *Am. Heart J.* 33: 135, 1947.

4. White, P. D.: *Heart Disease*. First and Third Editions. The Macmillan Company.

to heart disease may be recorded under some other cause. Similarly, many deaths due to some other cause may be reported as due to heart disease. Physicians may find it convenient to report unexpected deaths occurring in the course of some other illness, or in the postoperative period, as due to heart disease. Sudden death occurring under any circumstances is likely to be attributed to heart disease. Deaths in older people who do indeed have heart disease may often be attributed to this disease when it actually had very little to do with the cause of death.

When we come to consider the absolute incidence of the various etiological types of heart disease from the Census Bureau figures we are nearly lost. Hedley⁵ showed that only 78 of 259 death certificates which listed acute coronary occlusion as the cause of death were classified in the category of death due to involvement of the coronary artery. Master³ arrives at an estimate of the absolute incidence of acute coronary occlusion by sampling death certificates of the State of New York. He observed that 25% of the deaths reported under "Diseases of the Myocardium (Not Rheumatic)" were instances of acute coronary occlusion and that 60% of deaths ascribed to "coronary disease" and 80% of those attributed to "angina pectoris" were instances of coronary occlusion. Assuming that these same percentages obtain throughout the country, he finds that the total number of deaths due to coronary occlusion in 1942 was about 120,000. Assuming the mortality of coronary occlusion to be 15 to 20% he concludes that the incidence of attacks was 600,000 to 800,000.

TABLE 1
HEART DISEASE—DEATH RATE PER 100,000

	United States	Alabama
1925	184.8	114.2
1930	214.2	139.9
1935	245.5	138.8
1940	292.5	180.2

Table 1 shows the mortality rate from heart disease in the United States and in Alabama. It will be noted that there is an increasing death rate from this disease and that the rate for Alabama is considerably lower than that for the country as a whole.

5. Hedley, O. L.: Studies of Heart Disease Mortality, Pub. Health Bull. No. 231, 1936.

Now, paradoxically enough, a rising death rate from heart disease is not a thing to view with alarm, nor is Alabama's lower rate a thing to which to point with pride. The greatest force of mortality in heart disease is age and the increasing death rate from this disease is largely due to the aging of the population. Our lower death rate here probably means only that Alabama has a younger population. Indeed, the health officer might well refer to this rising trend as an indication of a job well done—more people have been saved from tuberculosis and pneumonia to live into the age group where the degenerative diseases hold sway. All men are mortal and our manipulation of the arithmetic of death by subtracting the mortality from preventable diseases must inevitably add to the toll of this benign and final executioner.

The purpose of this paper is to present a statistical analysis of the occurrence of clinical heart disease in our practice with particular reference to relative incidence of the various etiological types of heart disease occurring in Alabama and a comparison with similar figures from other sections of the country. Brief reference will be made to data relative to the absolute incidence of these diseases in the population group.

The population group from which these cases have been taken are the employees of a large steel manufacturing company, and their dependent families. During the period covered by this report, from 1936 to 1946 inclusive, there was an average of 28,130 employees of which 16,034 were white and 12,096 were colored. By sampling certain segments of this group it has been estimated that the average family for whites is 4.0 and for Negroes is 4.5. From these data it is estimated that the population group contains approximately 118,000 people, of which 64,000 are white and 54,000 are colored.

This population group differs in certain respects from the average population and these differences must be appreciated if the figures are to be evaluated. The greatest force of morbidity in heart disease is age and unfortunately here is our great imponderable. It is clearly a somewhat younger group than the average since it is based on the families of employed personnel. However, the dependent families do include dependent parents. The retirement age is 65 and, although pensioners who remain in

the vicinity are included in this group, a number of retired employees do move to Florida or "go back to the farm" so that this population contains relatively fewer old people. The group contains a larger percent of Negroes than the country as a whole and for that reason the rates are computed separately. This is an urban, industrial population in a primarily rural, agricultural state so that the forces of morbidity may be different from the state as a whole. Organic heart disease in the employed group is largely weeded out at the time of the original preemployment examination. However, heart disease which develops after employment is included. Because of greater stability of employment the group is probably better fed and better housed than the average. This tends to reduce the incidence of disease in general and may tend to reduce the incidence of heart disease. The manufacture of steel is largely done by skilled labor and while this group contains many in the higher income bracket, the vast majority of the workers are skilled laborers, for the most part miners and steel mill workers. The figures are based on a seven-year period of observation because this is the age of our cardiac clinic. Except as modified by these qualifications this may be considered to be a fairly representative population group.

The Health Department of the Company offers complete medical care to this population group through the facilities of a 315-bed general hospital and 14 medical dispensaries located near the plants and living quarters of the employees. The hospital operates a number of specialty clinics, among them a heart clinic and essentially all of the heart disease is referred to this clinic.

It is our belief that the cases of heart disease reported here represent nearly all—at least 95%—of the heart disease of sufficient severity to cause the patient to seek medical advice. Obviously, in any such large group of people, there are individuals, who, for reason of convenience or personal choice, prefer to consult private physicians for medical care. We are aware of such cases because they are occasionally referred to the cardiac clinic for electrocardiogram or consultation. While we have no precise check on the actual number, certain experiences indicate that the number is so small as to be

statistically insignificant; our hospitalization facilities, have, for many years, been acknowledged to be superior to any obtainable in this vicinity and are considerably less expensive for members of this group, so that when hospitalization is necessary it is infinitely more desirable for the employee to come to the company-operated hospital. Only rarely do we see a cardiac patient in the hospital who has been under the care of a private physician prior to entry. When an employee has been absent from work because of illness for more than two weeks he is required to submit to a reemployment examination; if the disability has been due to heart disease he is referred to the cardiac clinic. In 1946 only one instance of acute myocardial infarction treated by a private physician was discovered in this way.

TABLE 2

	White	Colored	Total
Total employees	16,034	12,096	28,130
Total population	64,000	54,000	118,000
"Cardiac" patients	4,139	1,965	6,104
Heart disease	1,406	1,012	2,418
Rate*	2,190	1,874	2,049

*Per 100,000 population.

Table 2 summarizes the data so far presented.

Here are the total employees, total population and the total "cardiac" patients. These are the patients referred for cardiac study, in which the cases of actual heart disease are found. The majority of these did not have heart disease; many of them were simple annual "check-ups," employment examinations, and as a part of the medical work-up prior to surgical procedures. There were 2,418 cases of organic heart disease of sufficient severity to produce symptoms and signs which met the "Criteria for Diagnosis of Diseases of the Heart" as set forth by the American Heart Association.

TABLE 3
INCIDENCE OF ETIOLOGICAL TYPES

	White		Colored		Total	
	Number of Cases	Relative Incidence	Number of Cases	Relative Incidence	Number of Cases	Relative Incidence
Hypertensive	743	55%	631	62.4%	1374	56.8%
Coronary	363	25.8%	57	5.7%	420	17.4%
Rheumatic	162	11.5%	147	14.5%	309	12.8%
Syphilitic	12	0.9%	59	5.8%	71	2.9%
Congenital	47	3.3%	23	2.3%	70	2.9%
Pulmonary	13	0.9%	7	0.7%	20	0.8%
B. endocarditis	3	0.2%	5	0.5%	8	0.3%
Miscellaneous	49	3.5%	69	6.8%	118	4.9%
Undiagnosed	14	1.0%	14	1.4%	28	1.2%
	1406		1012		2418	

Table 3 shows the relative incidence of the various etiological types of heart disease in this series. We will refer to these figures later.

HYPERTENSIVE CARDIOVASCULAR DISEASE

TABLE 4
HYPERTENSIVE HEART DISEASE
Relative Incidence 56.8%

	White	Colored	Total
Male	357	295	652
Female	386	336	722
Total	743	631	1374
Rate*	1160	1168	1164

*Per 100,000 population.

The criteria for the diagnosis of hypertensive cardiovascular disease in this study were the presence of sustained hypertension and cardiac enlargement apparently due to the hypertension. This accounted for 56.8% of our heart disease.

TABLE 5
HYPERTENSIVE HEART DISEASE
Relative Incidence

	White	Colored
Texas ⁶	45.3%	50.4%
Illinois ⁷	53.6%	60.4%
Washington, D. C. ⁸	51.4%	59.2%
Alabama	55.0%	62.4%

The incidence is higher in the females of both races and only very slightly higher in the colored race than in the white. It has been our clinical impression that hypertensive heart disease begins at an earlier age in the Negro race and is somewhat more common than these figures indicate. The relative incidence (Table 5) is considerably higher in the Negro in our series and this same difference is noted in similar studies in other parts of the country. However, the absolute incidence in the population group is about the same for the two races. This apparent difference then may be due to the relatively less frequent occurrence of other forms of heart disease; in our series this racial difference was chiefly in coronary heart disease.

6. Stone, C. T., and Vanzant, F. R.: Heart Disease as Seen in a Southern Clinic. A Clinical and Pathological Survey, *J. A. M. A.* 89: 1473, 1927.

7. Flaxman, N.: Heart Disease in the Middle West: Incidence and Etiology of One Thousand Six Hundred and Forty Six Cases at the Cook County Hospital, *Am. J. M. Sc.* 188: 639, 1934.

8. Gager, L. T., and Dunn, W. L.: Heart Disease in Washington D. C. Study of Etiological Types and Factors of Race, Age, and Sex in One Thousand Two Hundred Cases, *M. Ann. District of Columbia*, 2: 112, 1933.

TABLE 6
HYPERTENSIVE HEART DISEASE
Relative Incidence

New England ⁹	29.2%
Virginia ¹⁰	46.0%
Illinois ¹¹	26.2%
Iowa ¹²	34.5%
Colorado ¹³	30.4%
Oregon ¹⁴	70.0%
Texas ¹⁵	57.2%
California ¹⁶	21.5%
Alabama	56.8%

Table 6 shows a comparison of the relative incidence of hypertensive heart disease in Alabama with other sections of the country. It must be emphasized that the percentages are relative to the total number of cases of heart disease in the particular community. For example, the relative incidence of hypertensive heart disease in New England is lower because the incidence of rheumatic heart disease is higher.

CORONARY DISEASE

TABLE 7
TOTAL CORONARY DISEASE WITH AND
WITHOUT HYPERTENSION
Relative Incidence 17.4%

	White	Colored	Total
Male	283	49	332
Female	80	8	88
Total	363	57	420
Rate*	567	105	355

*Per 100,000 population.

9. White, P. D., and Jones, T. D.: Heart Disease and Disorders in New England, *Am. Heart J.* 3:302, 1928.

10. Wood, J. E., Jr.; Jones, T. D., and Kimbrough, R. D.: The Etiology of Heart Disease. Clinical Study of 623 Cases with Certain Observations on Race and Climate, *Am. J. M. Sc.* 172: 185, 1926.

11. Maber, C. C.; Sittler, W. W., and Elliott, R. A.: Heart Disease in the Chicago Area. A study of the Etiological Factors in One Thousand Cases, *J. A. M. A.* 105: 263, 1935.

12. Rathe, H. W., and Paul, W. D.: Study of Incidence of Various Etiologic Types of Heart Disease in Iowa. Review of One Thousand Three Hundred and Twenty Nine Cases, *J. Iowa M. Soc.* 23:125, 1933.

13. Durbin, E.: Heart Disease in Colorado, *Rocky Mountain M. J.*, 36: 173, 1939.

14. Coffen, T. H.: The Incidence of Heart Disease in the Pacific Northwest, *Am. Heart J.* 5: 99, 1929.

15. Schwab, E. H., and Schulze, V. E.: The Incidence of Heart Disease and of the Etiological Types in a Southern Dispensary, *Am. Heart J.* 7: 223, 1931.

16. Geiger, J. C.; Sampson, J. J.; Miller, R. C., and Gray, J. P.: A Survey of Heart Disease Morbidity in San Francisco, *American Heart J.* 12: 137, 1936.

TABLE 8
CORONARY WITH HYPERTENSION
Relative Incidence 7.0%

	White	Colored	Total
Male	92	25	117
Female	45	6	51
Total	137	31	168
Rate*	214	57	142

*Per 100,000 population.

TABLE 9
CORONARY WITHOUT HYPERTENSION
Relative Incidence 10.4%

	White	Colored	Total
Male	191	24	215
Female	35	2	37
Total	226	26	252
Rate*	353	48	213

*Per 100,000 population.

TABLE 10
CORONARY HEART DISEASE
Relative Incidence

New England ⁹	35.7%
Virginia ¹⁰	46.0%
Illinois ¹¹	24.1%
Iowa ¹²	15.4%
Colorado ¹³	17.3%
Oregon ¹⁴	17.0%
Texas ¹⁵	20.2%
California ¹⁶	29.9%
Alabama	17.4%

Coronary disease was diagnosed when the patient showed the clinical syndrome of angina pectoris, or acute myocardial infarction, or in a few cases on the basis of electrocardiographic findings alone; specifically auriculo-ventricular block, bundle branch block or significant T wave changes in the absence of hypertension or other demonstrable disease which might cause these changes. Let us emphasize this point: Coronary disease was not diagnosed in those patients who showed electrocardiographic changes which could be explained on the basis of a co-existing hypertensive or other disease which might cause these changes.

Coronary disease accounted for 420 cases or 17.4% of our heart disease. The majority occurred in white males with a much smaller number in white females and very few in the colored race. There were more cases with normal blood pressure than with hypertension. Obviously, many of the cases classified simply as hypertensive heart disease also had coronary arteriosclerosis but this is a clinical study and we have classified these patients only where the diagnosis was clinically apparent.

TABLE 11
ACUTE MYOCARDIAL INFARCTION WITH AND WITHOUT HYPERTENSION
Relative Incidence 7.7%

	White	Colored	Total
Male	150	13	163
Female	24	0	24
Total	174	13	187
Rate*	272	24	158

Mortality 20.8%

*Per 100,000 population.

TABLE 12
ACUTE MYOCARDIAL INFARCTION WITH HYPERTENSION

	White	Colored	Total
Male	46	7	53
Female	14	0	14
Total	60	7	67

WITHOUT HYPERTENSION

Male	104	6	110
Female	10	0	10
Total	114	6	120

There were 187 cases of acute myocardial infarction in this group, 67 with hypertension and 120 without. This incidence gives a rate of 158 per 100,000 for the seven-year period or an annual rate of 23 per 100,000. The annual rate per 100,000 for the white population is considerably higher, 38, but is still far below Master's³ estimate referred to above of 600,000 to 800,000 for the United States as a whole. His estimate would give an annual rate per 100,000 of from 430 to 570. This discrepancy has caused us considerable concern because it seems to contradict both the major premises on which this paper is based: That this is a fairly representative population group and that these cases represent nearly all the heart disease occurring in the group. Certainly, there is nothing in the climate or way of life in Alabama to make the incidence of coronary heart disease less than one-tenth that of the country as a whole. Granted that this population group is somewhat younger than the average of the country, the fact that 74.2% of our heart disease is hypertensive and coronary is sufficient evidence that the older age groups are well represented. Employees are ordinarily retired at age 65 but, if they remain in the vicinity, they may continue to use the medical facilities and it is believed that the majority of them do both. This series of cases of acute myocardial infarction does, in fact, include a number of pensioners. The possibility that

large numbers of cases of coronary occlusion sought treatment elsewhere was considered but this has been shown to be most unlikely. We will not argue our ability to diagnose coronary occlusion but it would appear that if we diagnosed only the more obvious, severer cases, our mortality would be high. This mortality was in fact 20.8%. The cases presented here are only the cases treated in the hospital. Patients dying suddenly at home would not be included here but we believe that acute myocardial infarction is only rarely a cause of sudden death. The "diagnostic awareness" of the physicians who refer patients to this clinic is attested by the fact the number of patients referred here with a diagnosis of myocardial infarction far exceeds the number in which the diagnosis is established.

TABLE 13
ANGINA PECTORIS

	White	Colored	Total
Male	75	3	78
Female	32	2	34
Total	107	5	112

TABLE 14
CORONARY HEART DISEASE
Relative Incidence

	White	Colored
Texas ⁶	24.0%	6.3%
Illinois ⁷	21.1%	8.5%
Washington, D. C. ⁸	26.0%	13.3%
Alabama	25.8%	5.6%

The low incidence of coronary disease in the Negro race is in keeping with experience in other clinics—56 cases, of which only 8 were female. This racial difference is even more strikingly shown when we consider the chief clinical manifestations of coronary artery disease—acute myocardial infarction and angina pectoris. There were only 13 cases of infarction, all in males, and only 5 cases of angina pectoris.

RHEUMATIC HEART DISEASE

TABLE 15
RHEUMATIC HEART DISEASE
Relative Incidence 12.8%

	White	Colored	Total
Male	81	63	144
Female	81	84	165
Total	162	147	309
Rate*	253	272	261

*Per 100,000 population.

TABLE 16
RHEUMATIC HEART DISEASE
Relative Incidence

New England ⁹	39.5%
Virginia ¹⁰	22.0%
Illinois ¹¹	29.2%
Iowa ¹²	27.3%
Colorado ¹³	24.8%
Oregon ¹⁴	13.0%
Texas ¹⁵	3.4%
California ¹⁶	22.2%
Alabama	12.8%

TABLE 17
RHEUMATIC HEART DISEASE
Relative Incidence

	White	Colored
Texas ⁶	10.0%	3.6%
Illinois ⁷	19.0%	10.0%
Washington, D. C. ⁸	7.2%	4.7%
Alabama	11.5%	14.5%

The criteria for the diagnosis of rheumatic heart disease are clinical evidence of characteristic structural valvular lesions with a history of rheumatic manifestation such as polyarthritides and chorea. We were not always able to obtain a history of rheumatic manifestation but in the presence of well marked signs of mitral stenosis there seems little chance of error in classifying such a case as rheumatic heart disease. A few cases of aortic regurgitation with no history of rheumatic fever or syphilis and with a negative Kahn did present a problem. We have arbitrarily classified the younger patients as rheumatic and the older as luetic. The remainder in the middle age groups have, after careful study, been classified as unknown. Similarly, cases of aortic stenosis in older patients who also showed evidence of coronary insufficiency and gave no history of rheumatic manifestation were classified as arteriosclerotic.

Rheumatic disease accounted for 12.8% of our heart disease. There was a higher incidence in the female in keeping with other figures and the incidence was higher in Negroes in our series though this is not in keeping with the data from other clinics which we have quoted here.

TABLE 18
RHEUMATIC HEART DISEASE
Valve Involved

Mitral	223	72.0%
Aortic	54	17.5%
Mitral & Aortic	32	10.5%
Total	309	

Of the 309 cases, 223 had involvement of the mitral valve alone, 54 had only aortic disease, and we were able to make a diagnosis of involvement of both valves in only 32 cases. The last figure is suspect, and it is quite likely that we have failed to diagnose minor degrees of aortic disease in the presence of mitral involvement. There were 106 cases of rheumatic myocarditis with and without valvular lesions. Only those with valvular lesions are included in these statistics.

TABLE 19
BACTERIAL ENDOCARDITIS
Relative Incidence

New England ⁹	1.9%
Illinois ¹¹	1.6%
Iowa ¹²	1.6%
Colorado ¹³	5.4%
Oregon ¹⁴	2.0%
California ¹⁶	0.9%
Alabama	0.3%

The only 8 cases of subacute bacterial endocarditis in our series complicated rheumatic heart disease and the fact that no cases were reported from the series in Texas and Virginia, quoted here, suggests that this complication is, indeed, rarer in the southern climate.

SYPHILITIC HEART DISEASE

TABLE 20
SYPHILITIC HEART DISEASE
Relative Incidence 2.9%

	White	Colored	Total
Male	8	43	51
Female	4	16	20
Total	12	59	71
Rate*	19	109	60

*Per 100,000 population.

TABLE 21
SYPHILITIC HEART DISEASE
Relative Incidence

New England ⁹	3.9%
Virginia ¹⁰	11.0%
Illinois ¹¹	9.5%
Iowa ¹²	6.2%
Colorado ¹³	2.6%
Oregon ¹⁴	5.0%
Texas ¹⁵	12.7%
California ¹⁶	7.2%
Alabama	2.9%

TABLE 22
SYPHILITIC HEART DISEASE
Relative Incidence

	White	Colored
Texas ⁶	9.2%	31.6%
Illinois ⁷	7.8%	27.1%
Washington, D. C. ⁸	4.3%	15.8%
Alabama	0.9%	5.8%

Syphilitic heart disease may be diagnosed on the basis of: 1. A history of syphilitic infection and evidence of characteristic structural lesion of the heart or aorta. 2. A characteristic structural lesion without a history of infection but with a positive serologic reaction. 3. A characteristic structural lesion together with evidence of syphilitic disease elsewhere even in the absence of positive serologic reaction or history of syphilitic infection.

Except for a few cases of aortic regurgitation mentioned previously, our cases met these criteria.

This is a somewhat smaller number of cases than might be expected and probably does not accurately reflect the incidence of this disease in Alabama. It rather reflects the efficacy of treatment. The Health Department of this Company has maintained venereal disease treatment centers for the past 25 years and an antivenereal disease campaign has been vigorously prosecuted throughout this period. Another obvious factor is that this is an employed and therefore more socially stable and perhaps less sexually promiscuous group than that seen in the average charity clinic.

CONGENITAL HEART DISEASE

TABLE 23
CONGENITAL HEART DISEASE
Relative Incidence 2.9%

	White	Colored	Total
Male	20	10	30
Female	27	13	40
Total	47	23	70
Rate*	73	42	59

*Per 100,000 population.

TABLE 24
CONGENITAL HEART DISEASE
Relative Incidence

New England ⁹	1.5%
Virginia ¹⁰	1.0%
Illinois ¹¹	0.6%
Iowa ¹²	2.6%
Colorado ¹³	1.7%
Oregon ¹⁴	0.1%
California ¹⁶	5.5%
Alabama	2.9%

A diagnosis of congenital heart disease was made on evidence of structural lesions which appeared to be the result of developmental defect. These are clinical cases; congenital defects discovered at autopsy on stillborn and neonatal deaths are not included in this number. The higher inci-

dence in the white race may be explained by the fact that a larger percentage of white children attend the well-baby clinics where many of these diagnoses are made.

PULMONARY HEART DISEASE

TABLE 25

PULMONARY HEART DISEASE

Relative Incidence

New England ⁹	0.9%
Illinois ¹¹	5.8%
Colorado ¹⁴	0.9%
Alabama	0.8%
California ¹⁶	0.9%

The criteria for the diagnosis of pulmonary heart disease are: 1. Evidence of extensive and long standing disease of the lung, such as emphysema or silicosis. 2. Evidence of cardiac insufficiency and enlargement of the right heart.

Only 20 cases were so classified. This relative incidence of 0.8% is comparable to other sections of the country.

MISCELLANEOUS

TABLE 26

MISCELLANEOUS

Relative Incidence 4.9%

Pericarditis	32
Myocarditis, cause undetermined	29
Paroxysmal auricular tachycardia and fibrillation	24
Thyroid heart disease	13
Traumatic heart disease	6
Purulent pericarditis	3
Constrictive pericarditis	2
A-V aneurysm	2
Carotid sinus syndrome	2
Disseminated lupus	1
Beri-beri heart disease	1
Family periodic paralysis	1
Myxedema	1
Myocardial abscess	1
Total	118

Rate 100 per 100,000

One hundred eighteen (118) cases or 4.9% are grouped as miscellaneous.

There were 32 cases of non-purulent pericardial effusion, three of which were tuberculosis and 5 were associated with other clinical evidence of rheumatic fever. No etiologic agent was discovered in the others and they all recovered.

The next largest number in the group (29) were classified as myocarditis not due to rheumatic or coronary disease. A few of these were believed to be due to scarlet fever, diphtheria, typhoid or other toxins but most of them had severe myocarditis,

the cause of which we could not find. Some of them may have been Fielder's myocarditis. Patients showing transient electrocardiographic changes in the course of respiratory infection were not classified here. Perhaps these cases might better have been classified as simply undiagnosed.

There were 24 cases of paroxysmal arrhythmia without other evidence of heart disease; mostly auricular tachycardia.

Only 13 cases of heart disease were classified as due to thyrotoxicosis. This figure is so small that it warrants some attempt at explanation. There were a few other cases of heart disease with thyrotoxicosis but we felt that the co-existing valvular, hypertensive or coronary disease was the more important etiological agent. Even with these cases added the relative incidence is much smaller than that reported by other writers. The best explanation appears to be that this population group, receiving as it does more comprehensive medical care than the average clinic group, has received earlier definitive treatment of thyrotoxicosis before cardiac damage could occur.

The remaining miscellaneous cases require no special comment—6 cases of traumatic heart disease, 3 cases of purulent pericarditis, 2 constrictive pericarditis, 2 cases of heart failure associated with arteriovenous aneurysm, 2 of carotid sinus syndromes and one each of disseminated lupus erythematosus, myxedema, beri-beri (this has been a well-fed group of people for the past 7 years and vitamin deficiency is practically non-existent), myocardial abscess, and family periodic paralysis.

UNDIAGNOSED

In addition to the 29 cases of undiagnosed myocarditis, 28 cases were classified simply as undiagnosed because of inadequate study or because they needed more expert study.

SUMMARY

An analysis of 2,418 cases of heart disease has been made with particular reference to relative incidence of the etiological types, with a comparison to similar studies in other sections of the country.

Brief reference has been made to an attempt to relate this incidence to a population group.

RESECTION OF THE MIDTHORACIC ESOPHAGUS FOR CARCINOMA

WYATT C. SIMPSON, M. D., M. S. in Surg., F. A. C. S.

Florence, Alabama

Interest in the surgical treatment of carcinoma of the thoracic esophagus has been given decided impetus in the past few years. The progressive development of intrathoracic surgery in general, the attendant improvements in anesthetic administration, and the control of infection by use of the antibiotic drugs have contributed largely to this interest.

However, until quite recently, surgical extirpation of esophageal cancer failed to provide satisfactory palliation because the available substitutes for esophagogastric continuity were usually unsatisfactory. Either the patient had to employ a rubber hose connection between the proximal stump in the neck and the gastrostomy opening, or be subjected to tedious, multiple-staged plastic operations for the construction of a subcutaneous tunnel. Often these patients died of recurrence before the final reestablishment of continuity was accomplished.¹ For these reasons an attitude of discouragement had become fairly general regarding these lesions, and in many centers they had been abandoned to the questionably palliative effects of bouginage and irradiation.

In view of the frequency of the occurrence of cancer of the esophagus (4 to 6 percent of all malignancies)² and the relative curability (25 percent of such patients coming to autopsy at the University of Michigan Hospital in a 10-year period were found to have technically curable lesions),³ such an attitude was retarding to surgical progress in this field.

Fortunately a small group of surgeons continued their efforts to improve the surgi-

cal management of this lesion. In 1943 Garlock⁴ published a report of the first successful direct reestablishment of esophagogastric continuity following resection of a carcinoma of the middle third of the esophagus. He demonstrated that the stomach could be elongated into a tube by severing its vascular connections on both curvatures almost to the duodenum, yet still retain ample blood supply to permit healing to an esophageal stump in the apex of the chest.

Following this lead, a few other surgeons have reported isolated or small series of cases successfully handled in a similar fashion.

As the number of such cases reported is still quite small (under fifty in a summary of available literature), and as the physicians in general are unfamiliar with the availability and feasibility of such a procedure, it seems desirable to submit this report of a patient with cancer of the mid-thoracic esophagus who has been successfully treated by transthoracic esophageal resection and one stage esophagogastric anastomosis.

The patient, a 58-year old white woman, was first seen on March 3, 1947. Her chief complaint was difficulty in swallowing, of two months duration. At first this difficulty had only been manifest while taking solid foods, but had become progressively worse so that she was taking soft foods and liquids with some difficulty.

Physical examination revealed an emaciated elderly white woman in no acute distress. Except for emaciation, the general physical examination revealed no significant findings but an adenoma of the left lobe of the thyroid gland. This was known to have existed for at least four years.

Fluoroscopic and x-ray examination of the esophagus revealed an irregular narrowing in its mid-portion. (Fig. 1.)

1. Sweet, R. H.: Carcinoma of the Mid-Thoracic Esophagus, *Ann. Surg.*, 124, Oct. '46.

2. Nagel, G. W., and Menke, J. F.: Trans-thoracic Operations for Neoplasms of the Esophagus and Stomach, *Surg., Gynec. and Obst.* 83: 657-666, Nov. '46.

3. Kay, E. B.: Experimental Observations on Reconstructive Intrathoracic Esophagogastric Anastomosis Following Resection of the Esophagus for Carcinoma, *Surg., Gynec. and Obst.* 76: 300-314, Mar. '43.

4. Garlock, J. H.: The Reestablishment of Esophagogastric Continuity Following Resection of Esophagus for Carcinoma of Middle Third, *Surg., Gynec. and Obst.* 78: 23-28, Jan. '44.



Fig. 1. Roentgenogram showing filling defect in esophagus at level of inferior border of aortic arch.

Esophagoscopy examination by Dr. Guy Maness of Nashville, Tenn. on April 8 revealed a crater-like ulceration on the right side involving some of the posterior wall of the esophagus located at about the mid-portion. The lumen of the esophagus was not markedly narrowed. The walls showed

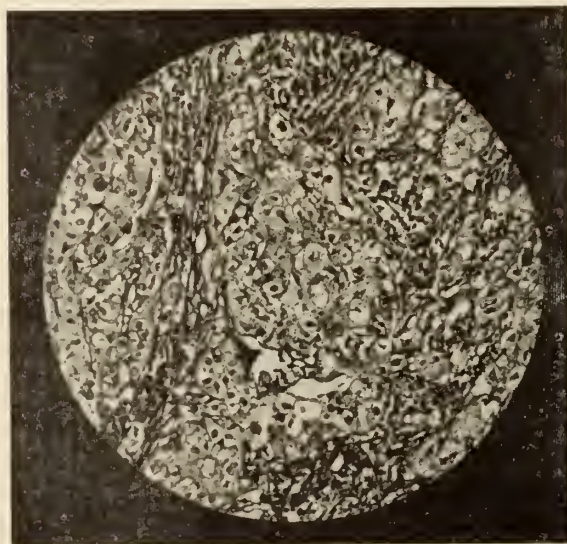


Fig. 2. Photomicrograph of biopsy specimen, showing squamous cell carcinoma.

only slight fixation. Biopsies revealed definite squamous cell carcinoma. (Fig. 2.)

Following the esophagoscopy examination it became impossible for the patient to swallow even liquids. She was admitted to the hospital on April 9, 1947 and prepared for jejunostomy by the intravenous administration of amino acids, glucose, and ascorbic acid. Her serum protein on admission was 5.2 milligrams per cent.

On April 11, a jejunostomy tube was inserted for the purpose of improving her state of nutrition preparatory to definitive surgery. Despite variations in the character of the formula used, and in the amounts instilled (even a slow drip being tried), the patient was never able to tolerate jejunostomy feedings. Whenever any fluid was instilled into her jejunum reflex vomiting occurred. Therefore it was decided that no further delay of the extirpation procedure was justifiable.

On the day prior to operation she was allowed to chew penicillin troches (50,000 units) every 3 hours and swallow the resulting juices. This was done in an effort to accomplish surface sterilization of the lesion. She was also given 20,000 units of penicillin intramuscularly every 3 hours during this period.

Operation was carried out on April 25, 1947 under ethylene oxygen-ether anesthesia administered through an intratracheal tube. Prior to beginning the thoracic incision a cannula was tied into each internal saphenous vein at the ankle and citrated blood allowed to run in by slow drip.

The patient was then placed on her right side with the arms extended forward on a board. Incision was made along the course of the eighth rib from the anterior axillary line to one inch posterior to its angle, thence upward paravertebrally to the level of the spine of the scapula. (Fig. 3.) The eighth rib was resected subperiosteally as were one inch segments of the sixth, seventh, ninth, and tenth ribs, the segments being removed posterior to the angles. The thorax was opened through the eighth rib bed and the space thus provided, and the opening widened by use of a Balfour self-retaining retractor. It was necessary to divide many adhesions between the left lung and parietal

pleura and pericardium before the former could collapse and be retracted anteriorly.

It was thought best to paralyze temporarily the left phrenic nerve with procaine

rather than to crush it in order not to encourage postoperative atelectasis. The lung root was severed and the parietal pleura incised to the right of the aorta up to the arch. (Fig. 4.) At this point a firm tumor could be felt in the esophagus, approximately 3 centimeters long and apparently encircling it. One hard lymph node was attached to the esophageal wall at this point.

Mobilization of the tumor-bearing segment was accomplished first in order to avoid extensive interference with the blood supply of the remainder of the esophagus should the lesion prove locally inoperable. This mobilization was carried up well above the aortic arch. In separating adhesions from the latter, a small opening was made in the right parietal pleura. This was im-

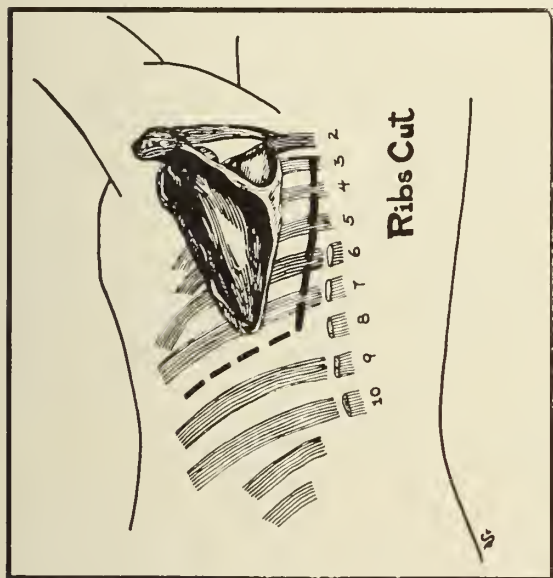


Fig. 3. Diagram illustrating incision, with removal of 8th rib and resection of ribs 6, 7, 9 and 10 at their angles.

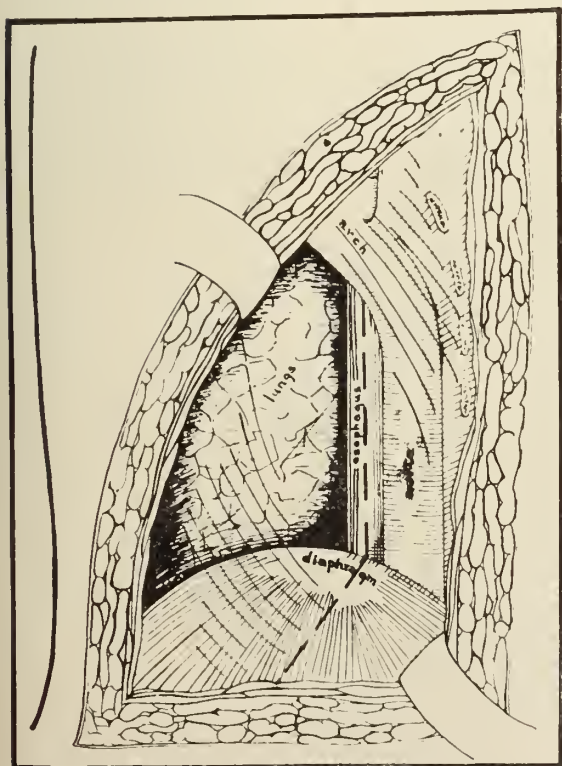


Fig. 4. Chest opened, lung collapsed and pleura in front of aorta.

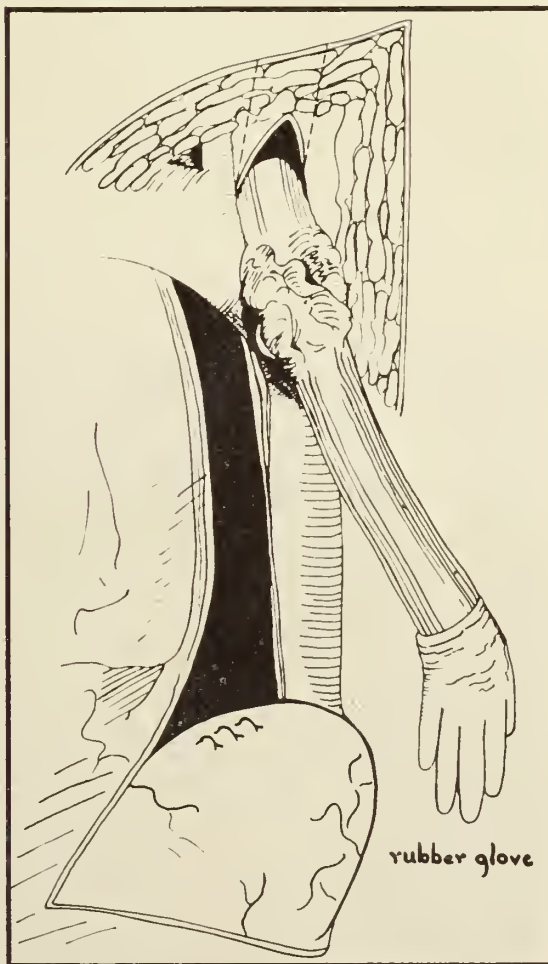


Fig. 5. Stomach closed with running Lembert, reinforced with interrupted cotton sutures. The esophagus has been pushed up and brought out over the aortic arch.

mediately closed and no embarrassment of respiration occurred.

Mobilization of the esophagus was carried out down to the diaphragm which was opened radially from the esophageal hiatus to the costal margin. The phrenic arteries were controlled by suture ligatures. The short gastric vessels and branches of the left gastro-epiploic vessels were clamped, cut and ligated down to the junction with the right gastro-epiploic vessels, care being taken to leave a vascular arc on the gastric side of the vessel section. The branches of the left gastric vessels were similarly treated and the gastrohepatic omentum widely opened. The esophagogastric junction was severed between clamps and the proximal end ligated and protected with a rubber glove. The distal end was inverted with a running Lembert suture of catgut and reinforced with interrupted mattress sutures of cotton.

An opening was made in the supra-aortic parietal pleura and the esophagus pushed up behind the arch of the aorta and brought over it through this opening. (Fig. 5.) The fundus of the stomach was brought up to this level and secured to the periosteum of the adjacent ribs by cotton sutures. Anastomosis was made between the esophagus and the stomach at a level approximate-

ly one inch above the upper level of the tumor in the following manner:

The posterior wall of the esophagus was united to the anterior surface of the fundus by interrupted mattress sutures of cotton, with the preliminary precaution of uniting the two by stay sutures at the lateral margins of the esophagus in order to maintain its maximum circumference during construction of the anastomosis. (Fig. 6.) The posterior wall of the esophagus was opened and a corresponding opening made in the fundus of the stomach. These two cut edges were united by interrupted sutures of cotton through the full thickness of their walls. (Fig. 7.) In addition, the mucosal edges were separately united by interrupted sutures with the hope of diminishing the tendency to stricture formation.

The resection of the tumor-bearing portion of the esophagus was then completed. A Levine tube was then drawn down from the proximal esophagus into the stomach and the anterior anastomosis completed by two rows of interrupted mattress sutures of cotton.

The stomach was sutured to the parietal pleura above the level of the anastomosis, and the esophagus to that below this level, thus eliminating all tension on this line of

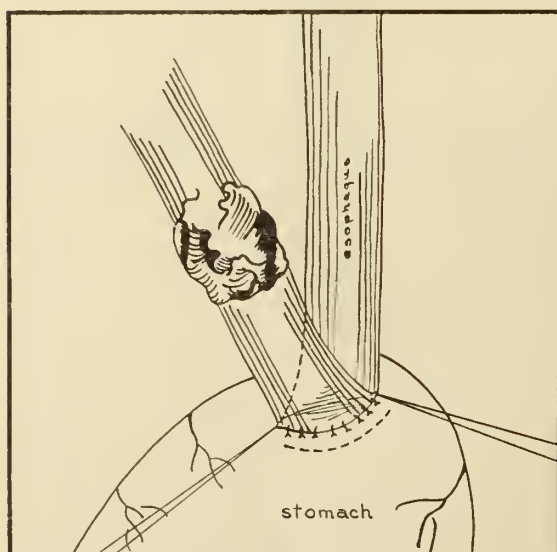


Fig. 6. Tumor-bearing portion of esophagus is still attached. First posterior row of sutures has been placed. Stay sutures at lateral margins maintain circumference of prospective anastomosis.

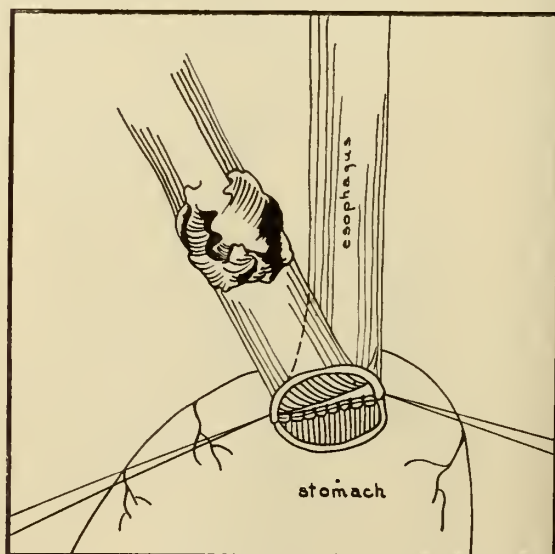


Fig. 7. Posterior wall of esophagus opened and corresponding opening made in fundus of stomach. Mucosal sutures in posterior wall of anastomosis.

union, as suggested by Carter and McGrath.⁵

The diaphragm was closed at the lowest feasible level around the stomach, to which it was united by interrupted sutures. (Fig. 8.) A catheter was brought out through a stab wound in the 10th intercostal space. The lung was allowed to reexpand and the incision in the chest wall closed in layers, using four pericostal sutures of braided silk, supplemented by running sutures of catgut.

The operative procedure lasted five and one-half hours. The patient received five pints of citrated blood during the operation.

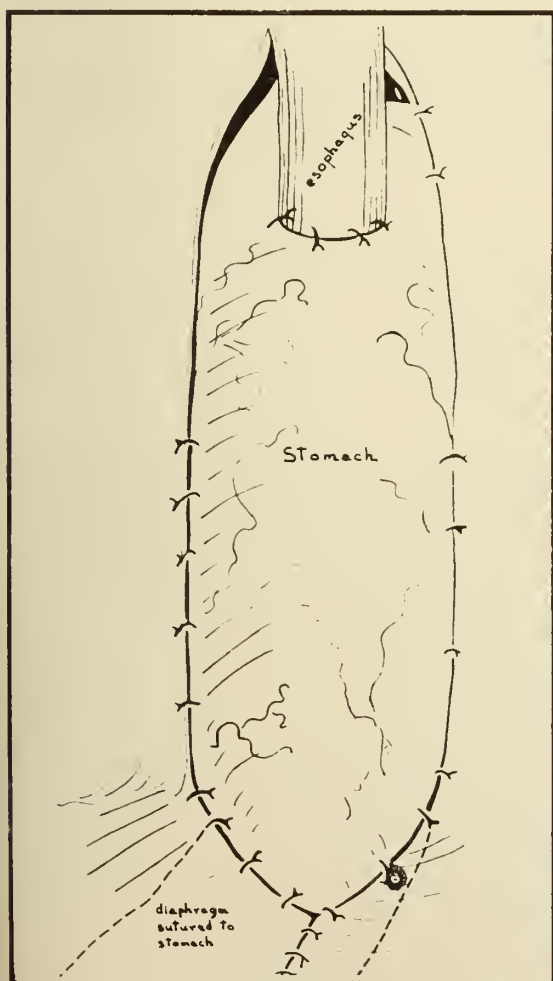


Fig. 8. Anastomosis completed. Stomach, having been converted into a narrow tube, is fixed in position by suturing to parietal pleura.

5. Carter, B. N., & McGrath, E. J.: Esophago-gastrostomy for Lesions of the Upper End of the Stomach and Lower End of the Esophagus, *Surg. Clinics N. A.* 26: 1125-1139, Oct. '46.

Upon returning to her room she was placed in an oxygen tent, suction was applied to the Levine tube, and the thoracotomy tube was allowed to drain into a water trap. Venoclysis was continued at the rate of 30 drops per minute. One more pint of blood was allowed to run in and subsequent venoclysis was continued with amino acids and glucose.

No evidence of surgical shock was manifest either during the operation or afterwards. During the first postoperative week she could not tolerate removal from the oxygen tent because of the development of dyspnea and cyanosis. Thereafter she was able to sit up out of bed for increasing intervals and after the 14th day she began to walk about her room.

At no time was the temperature higher than 100° F. Continuous Wangenstein suction was applied to the Levine tube through the sixth postoperative day. On the seventh day, one ounce of water was given hourly with the tube open. On the eighth day this was continued with the tube clamped off. As no evidence of leakage or gastric distention ensued, the tube was removed and during the next week the pa-

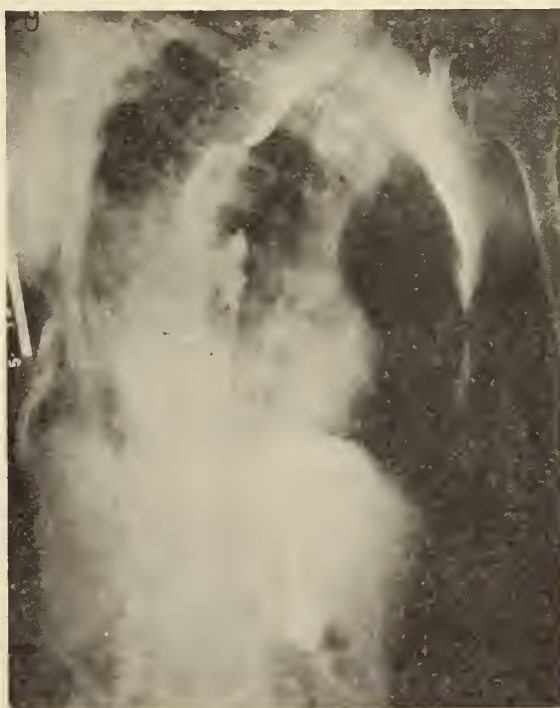


Fig. 9. Postoperative roentgenogram showing angulation and narrowing at site of anastomosis.

tient was advanced progressively on a gastroenterostomy diet.

Two grams of sodium sulfadiazine were given intravenously every eight hours for the first 10 days and 40,000 units of penicillin were given intramuscularly every 3 hours during the same period. Five hundred (500) milligrams of ascorbic acid were given twice daily intravenously as long as the patient was receiving intravenous feedings. These were discontinued on the twelfth postoperative day. The sutures and intercostal drainage tube were removed on the thirteenth postoperative day. X-ray examination of the esophagus on the fourteenth day showed a well functioning stoma. (Fig. 9.)

The patient was discharged from the hospital on the eighteenth day after operation. At this time she was swallowing soft foods without difficulty and was gaining weight

and strength. Her serum protein at the time of discharge was 6.85 milligrams percent.

She was seen in the office five months after discharge and her improvement had continued.

SUMMARY AND CONCLUSIONS

1. A case of carcinoma of the mid-thoracic esophagus has been presented in which transpleural resection and primary esophagogastric anastomosis has been accomplished.

2. Two departures from previously reported techniques were utilized: First: The distal esophagus is not removed until the posterior suture lines have been established. Second: No clamps are used on the end of the esophagus.

4. The feasibility of high intrathoracic esophagogastric anastomosis is reemphasized.

CALIBRATION AND USE OF THE PHOTOELECTRIC COLORIMETER

H. R. CROOKSHANK, Ph. D.
Biochemistry Department
Medical College of Alabama

Birmingham, Alabama

The photoelectric colorimeter and its companion, the spectrophotometer, were developed to give constant and accurate determination of the intensity or density of color in solution and in this manner eliminate the error due to the variable sensitivity of the human eye. As is the case with many new devices, better techniques than those usually employed are necessary to achieve the maximum in accuracy and efficiency of these extremely valuable aids to clinical chemistry.

Perhaps the best starting place would be a short description of a photoelectric colorimeter and a spectrophotometer and the simple theory underlying their use. Since the photoelectric colorimeter and the spectrophotometer differ only in the light filter, for the present they can be considered together. Photoelectric colorimetry is based upon the property possessed by photoelectric cells of generating a small electric cur-

rent proportional to the intensity per unit area of light falling on the cell. The current thus generated is quite small so that it is necessary that a sensitive galvanometer be used to measure it. If the galvanometer is connected with the photoelectric cell, the reading of the galvanometer will be proportional to the amount of light falling on the cell, since the galvanometer measures current. If a glass cuvet or tube containing a colored solution, whose color intensity it is desired to measure, is placed between the light source and photocell in such a manner that the only light which can fall on the cell must pass through the colored solution, there will be a change in the reading of the galvanometer proportional to the intensity of the color of the solution. The deeper the color the more light will be absorbed with a consequent reduction in the amount reaching the photocell and a corresponding decrease in the galvanometer reading.

There are two general types of photoelectric colorimeters available. Most clinical photoelectric colorimeters have a single

photoelectric cell connected with a galvanometer which has been graduated either in per cent transmission (0 to 100) and/or with a logarithmic scale (0 to 2). The source of light is a tungsten filament, usually a projection lamp of the same kind used in home movie outfits or an automobile headlight, the current being obtained from a storage battery or the regulation 110 volt A. C. supply stabilized by a constant voltage regulator. This type of colorimeter is less complicated in construction and readings may be made more quickly than with the two

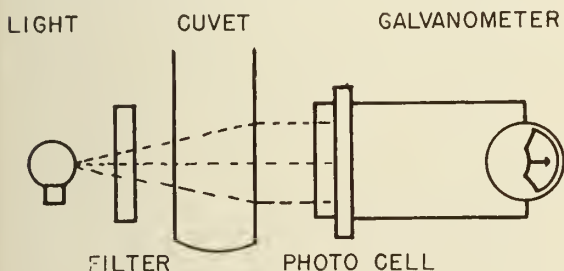


Figure 1

cell instrument which is the second general type. The two cell colorimeter has the advantage of more accurate readings with a greater variation of line voltage allowable.

A review of the general outline of the steps in using the colorimeter will be given and then each of the steps considered in detail. The instrument with the proper filter in place should be turned on from 5 to 10 minutes before a reading is made in order that all parts of the electrical circuit may come to equilibrium. Insert the tube containing the blank and adjust the galvanometer until it reads 100 on the per cent scale or 0 on the log scale. Remove the blank, insert the tube of test solution and record the reading. If a standard or more test samples are used, repeat the procedure.

A standard solution may be used in the same manner as in visual colorimetry. The greater the density of color, the smaller the amount of light striking the photocell with a corresponding decrease in reading. By using the various laws of light, colorimetry, etc., the following mathematical expression of the concentration of unknown where the results are to be expressed in milligrams per 100 ml. of blood can be obtained:

$$Cu = \frac{Ru}{Rs} \times \frac{Cs}{V} \times 100 \times \frac{Du}{Ds}$$

where Cu = concentration of unknown

Cs = concentration of standard

V = volume of whole blood in the sample

Du = final volume of unknown

Ds = final volume of standard

Ru = 2 — log of transmission of unknown

Rs = 2 — log of transmission of standard

As a general rule, Du and Ds are the same. Colorimeters equipped with logarithmic scales give Ru and Rs directly. For those that give per cent of transmission, it is necessary to look up the log of the reading and subtract it from 2. Tables are available which may be used for making the conversion. Closer inspection of this expression reveals that it differs from that used for the visual colorimeter only by the inversion of Rs and Ru where they represent the reading in millimeters of standard and unknown respectively.

A second method of obtaining the concentration of the unknown is to prepare a calibration curve. This is done by preparing a series of standards of varying concentrations to cover the maximum range usually found in the unknowns. If the reading of each is plotted graphically against its concentration, a calibration curve is formed. The solution of unknown concentration can then be referred to this curve to determine its concentration.

If the filter of proper wavelength and the procedure are known, what must be done to use the instrument properly? The items to be considered are warming up the instrument, selection of the proper cuvet or tube, the volume of sample in the cuvet or tube, reagent blank, and extraneous light. In order for the instrument to be ready to be read, it is turned on and allowed to stand from 5 to 10 minutes so that the electric circuits can reach equilibrium. Never turn on the instrument unless the light filter is in place. Omitting the filter can cause irreparable damage to the galvanometer.

Many of the commercial colorimeters are equipped with special cuvetts or tubes while others may use an optically uniform test tube. It is well to have some identifying

mark on the upper portion of the tube and always to insert the tube with this mark in the same relative position. A colorimeter tube should have the same wall thickness at all portions, and the round style tube should be symmetrical. Otherwise, there will be distortion of the light with resulting incorrect readings. If the procedure outlined above, of using matched tubes which are always inserted in the colorimeter in the same position, is followed, one possible source of error can be eliminated. The same precautions apply to the square tubes in that they should always be inserted in the same manner each time.

It is equally important not to have too much solution nor to have too little solution in the tube. If the volume is too little then not all the light reaching the photocell will pass through the solution, thus showing higher transmission of light with concentration values that are too low. If, on the other hand, the tube is too full, the solution may spill over on the outside of the tube and into the instrument.

The tubes or cuvettes should be clean and dry at the time of use. Spots, etc., will reduce transmission giving high values for unknowns. If the tube is not dry on the inside at the time, but is clean, it should be washed with some of the solutions and then used. Never use a tube that is not dry on the outside. Water, etc., may be wiped off the outside with a clean, dry lint-free cloth or tissue.

The blank or reagent blank, these terms being synonymous, should be composed of all the reagents in the same amounts as in the unknown with distilled water substituted for the unknown. If the blank is given the same treatment as the unknown possible sources of error such as time, age of reagents, and rate of addition of reagents will be ruled out. In addition, many reagents have a slight color, for example, Nessler's reagent. Distilled water should never be used as the reagent blank. If you do not desire results to be accurate to more than $\pm 10\%$, then use distilled water but the advantage of greater accuracy of a photoelectric colorimeter will be lost. Comparison in the visual colorimeter is at least that accurate.

In tests conducted in the Biochemistry Laboratories at the Medical College of Ala-

bama, solutions of known concentration of nitrogen were nesslerized and read in a spectrophotometer with the zero adjustment (100 per cent transmittance) made, first, with distilled water, and second, with a reagent blank containing all the reagents. The values in mg. per cent of nitrogen obtained when the known concentration of nitrogen was read against the distilled water blank were about 7.5 mg. per cent higher than when read against the reagent blank. If the reagent blank was considered the sample and read against the distilled water blank, a value of about 7.0 mg. per cent of nitrogen was obtained which is approximately the amount the known concentration of nitrogen readings differed with the two blanks. Repeating the procedure at a later date with a different solution of Nessler's reagent and with the same concentration of nitrogen, the distilled water blank gave values about 6.3 mg. per cent above that obtained with the reagent blank. The reagent blank when read against the distilled water blank gave a value of about 6.5 mg. per cent of nitrogen which again is approximately the amount the known concentration of nitrogen readings differed with the two blanks. Identical values for the solutions of known concentration of nitrogen were obtained with the Nessler's reagents used on different days when read against the reagent blank. The value very closely approximated the theoretical value. Thus by making the initial adjustment with the reagent blank, the colorimeter compensates for the amount of color in the reagents, and the reading obtained is a true measure of the amount of substance which forms the color above that in the reagents.

If the colorimeter being used has its calibration curve made against distilled water, accurate results can not and will not be obtained unless a reagent blank is made at the same time the samples are prepared and also read against the distilled water blank. The values thus obtained in mg. per cent should then be deducted from the value in mg. per cent obtained for the sample. Readings in per cent transmittance or in optical density can not be so treated. The alternative for accurate results is to make a new calibration curve with the initial adjustment made against a reagent blank. Details of the preparation of a calibration curve are given later in this paper.

Outside or extraneous light has been a subject of much discussion but unless it is a strong bright light, shining directly down into the tube, it does not interfere greatly. It is best, however, as a matter of policy to have the colorimeter located where direct sunlight, etc., can not reach it.

Some of the steps in reading the colorimeter may well be emphasized. After allowing the instrument to warm up and having prepared the proper blank, the blank is inserted into the colorimeter and the galvanometer adjusted to the zero reading. Then the test samples and standard, if used, are inserted and galvanometer readings noted. The zero setting should be checked frequently with the blank to be sure that no change has occurred.

Having obtained the reading of the instrument, that is, the per cent transmission or optical density, it must now be interpreted. Many instruments come equipped with a calibration chart. This probably is an accurate chart if the instrument is in proper working condition and if the reagent blank used in calibrating was a true reagent blank and not distilled water. It is always well, in fact, necessary, to check the calibration chart periodically to insure that your instrument is working correctly. This is a very simple procedure and may be best illustrated by an example: the non-protein nitrogen determination. In this procedure, a filtrate equivalent to 0.5 ml. of whole blood is used and the standard and unknown are diluted to the same final volume. A solution containing 0.1 mg. of nitrogen is used and it is assumed that this amount of nitrogen was in the 0.5 ml. of blood. Under these conditions the reading of the standard and sample would be the same. Referring then to the mathematical expression:

$$Cu = \frac{Ru}{Rs} \times \frac{Cs}{V} \times 100 \times \frac{Du}{Ds}$$

Cu may be calculated.

$$Cu = 1 \times \frac{0.1}{0.5} \times 100 \times 1 = 20$$

The reading of the instrument then should be the same reading that would give 20 mg. per cent on the calibration chart.

What should be done if the results do not check with the calibration chart? The first

is to run several more samples making sure all solutions are made correctly and that the proper volumes of each are used. If this does not help, the instrument should be checked for proper operation. If the instrument is performing correctly, a new calibration curve should be made or else a standard used each time. In general, it is best to make a new curve because there is not always a linear relation between the amount of color and concentration. When results are questioned, it is always well to repeat the determination on a "normal" sample of the body fluid.

The preparation of a calibration curve was referred to above. It should be considered in more detail. The calibration curve is made by preparing in duplicate or triplicate a series of standards of varying concentrations; reading them in the colorimeter; and graphing the readings against the concentration. The standards should be prepared by treating them in exactly the same manner as the sample. In fact, the only difference between the standard and a sample as far as procedure is concerned is that the concentration of the standard is known while the concentration of the sample is desired. The concentration of the standards used for calibration should cover the maximum range usually found in the unknown. Returning to the non-protein nitrogen used before as an example, a calibration curve may be made. Values between 10 and 80 mg. per cent are expected; therefore, the standards should cover this range. It will be recalled that 0.1 mg. of nitrogen in 0.5 ml. of blood was equal to 20 mg. per cent non-protein nitrogen. In a like manner it may be calculated that 0.05 mg. = 10 mg. per cent; 0.2 mg. = 40 mg. per cent; 0.3 mg. = 60 mg. per cent; 0.4 mg. = 80 mg. per cent. These standards then should be treated exactly as if they were blood filtrates. The volume of the standard should not exceed that of the blood filtrate which would be used, and if it is less it should be diluted to the same volume with distilled water. They should then be digested with sulfuric acid and hydrogen peroxide, diluted, treated with sodium hydroxide and Nessler's in exactly the same manner that blood filtrate would be treated. They are then read in the colorimeter and the readings plotted. A curve similar to the one shown in Figure

2 will result. A chart can be made from the graph, or the graph itself used to determine the concentration of unknown samples.

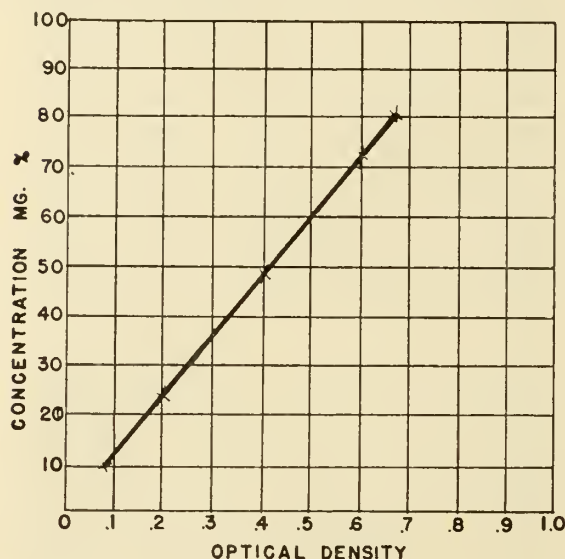


Fig. 2

The choice of the proper color filter or wavelength usually is given in the directions accompanying the colorimeter. It is well known that colored substances in solutions owe "color" to the fact that they selectively absorb certain parts of the visible spectrum. A blue color is blue because it transmits the blue portion of the spectrum and absorbs the red portion and all other portions visible to the eye. Hence, a red filter will transmit red light that would be absorbed by the blue solution. This relation between transmittance or optical density of a solution containing light absorbing material and the wavelength of light passing through the solutions is given by the absorption spectrum of the substance. The absorption spectrum is established quantitatively by the transmittance of a particular concentration and depth of a solution at various wavelengths and plotting the results in the form of a curve relating the transmittance or optical density to wavelength. The use of absorption spectra is not limited to the visible range but may be applied equally well to the characterization of the ultraviolet or infra-red absorption of many substances. This latter application has not as yet reached the clinical field because of the cost of suitable instruments.

For particular substances, absorption curves at different concentrations will be

generally similar in shape but will differ in their position along the transmittance axis. As the concentration of substance is increased, there is usually increased light absorption at all wavelengths where any light is absorbed, but this increase is usually greater per unit change in concentration at some wavelengths than at others.

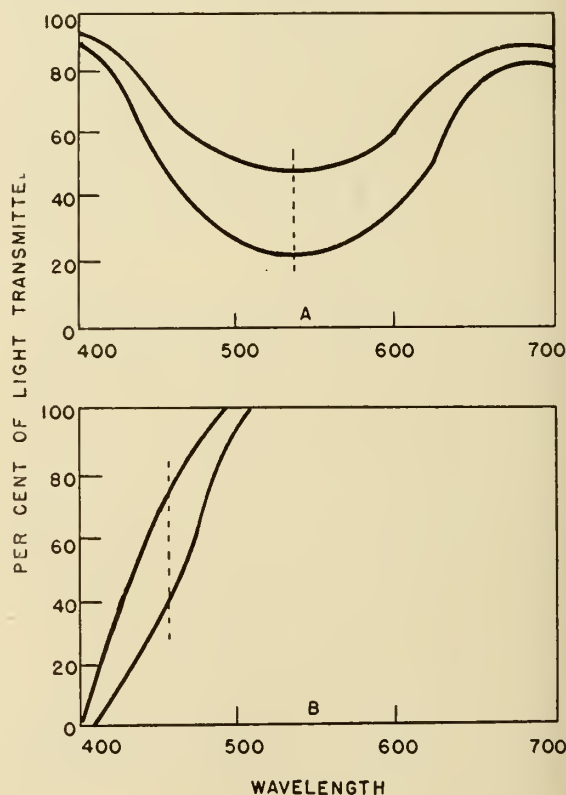


Figure 3

Maximum sensitivity in a photometric procedure is obtained at the wavelength where there is the greatest change in optical density or transmittance per unit change in concentration. For some substances this is the wavelength of maximum light absorption or the wavelength at the "peak" of the absorption curve. (See dotted line Fig. 3A.) Other substances show their greatest change in light absorption with change in concentration at some other wavelength than that of maximum absorption, that is, at a wavelength intermediate to high and low absorption. (See dotted line Fig. 3B.) An example of the former is hemoglobin which has a very narrow wave band or peak of absorption at 540 μ in the green. In this case, it not only increases sensitivity but

also specificity. Procedures using Nessler's are examples of the second type of curve. They give greatest change per unit concentration between 480 and 520 $m\mu$, minimum absorption is at about 420 $m\mu$ and maximum about 610 $m\mu$.

Maximum sensitivity is not always the chief consideration in the selection of the proper wavelength. The most accurate analytical results are obtained at the wavelength which permits the range of values to fall within the most accurate region of the photometer scale. The most accurate region of the scale corresponds to densities between 0.05 and 1.00 (90 to 10 per cent transmission). Readings outside this range represent solutions which are either too light or too dark to be read accurately.

The Folin-Wu blood sugar method may be used as an example. A wavelength may be selected which represents low sensitivity so that the normal glucose standard (100 mg. per cent) will have a low light absorption. This will permit reading values well above normal which is the usual direction of change.

Some other factors which may influence the choice of wavelengths are either that a wider range of concentration may fall within the accuracy range of the photometer at one wavelength than at another, or the color may be more stable at one wavelength than at another.

Still another factor influencing the selection of a proper filter is the presence of a contaminating color. In the determination of creatinine by use of picric acid, creatinine picrate, a red colored compound is formed. It would seem that a filter or wavelength in the blue should be used for maximum sensitivity. However, a large excess of picric acid, which is yellow, is required for this reaction. The picric acid yellow also shows a strong absorption in the blue range so a blue filter would introduce considerable error. At wavelength 520 $m\mu$ in the green, while creatinine picrate absorption is not as great as in the blue, it still is appreciable. Picric acid yellow absorption at this wavelength is negligible. Therefore, this wavelength is preferable to the more sensitive wavelength for analytical work.

How then can a photometer of the filter type which can not be adjusted to narrow

wavelengths be used? It may be used in the following manner to see if it has a suitable filter. This may be done by preparing standards of the high and the low values that are anticipated and reading them with the various filters, being sure to adjust the instrument with the reagent blank every time the filter is changed. The filter which has the widest range between the high and low concentrations and still is within the limits of accuracy of the instrument is the one to use. From the spectrophotometer type of instrument, the type of absorption curve already illustrated (Fig. 3) is obtained and from that is selected the wavelength which fulfills the requirement.

At this time, the differentiation between the photoelectric colorimeter and the spectrophotometer should be made. They differ only in the light filter. The wavelength at which photometric measurements are made may be established either by use of light filters as in the ordinary photoelectric colorimeter or by production of the entire spectrum and isolation of the desired portion by means of a prism or diffraction grating as in the spectrophotometer.

Light filters consist of selected colored glass or dyed gelatin which is capable of transmitting light over a limited portion of the spectrum. The light filters usually transmit over a narrow range of wavelengths, rather than a single wavelength, that is, a range of about 70 $m\mu$. The spectrophotometer will transmit the single wavelength or at the most 5 $m\mu$. It is customary to designate a filter in terms of the wavelengths of its peak transmittance, thus a filter called No. 50 or No. 500 has its peak transmittance at the wavelength of 500 $m\mu$.

By use of the proper wavelength, many methods in colorimetry can be adapted to the photoelectric colorimeter. The instrument is of definite value where readings must be taken at a given specific time after mixing the reagents and many of the colorimeters are supplied with cuvetts or tubes of sufficient size to enable the entire procedure to be carried out in them. On the other hand, they are also able to be adapted to micro methods. Numerous procedures are being devised for the colorimeter and many of them will be of clinical significance. Just to enumerate a few, we have colorimetric procedures for amino acids, amino ni-

trogen, vitamins and drugs, such as sulfonamides, streptomycin, penicillin and many others.

While it is true that the use of proper filters in the visual colorimeter increases the accuracy of the instrument, it is still a proven fact that the photoelectric cell is more sensitive and much more constant than the human eye.

The photoelectric colorimeter can not compensate for mistakes which the operator makes in preparing solutions to be read. It is of importance then that much emphasis be placed on following the directions for any given procedure. If the procedure directs that the solution must boil 8 minutes, 7 or 9 minutes are not satisfactory.

Properly used, the photoelectric colorimeter can be of great service; improperly used, a great detriment.

DISCUSSION

Dr. Joseph K. Cline (Birmingham): Dr. Crookshank has very capably pointed out to you the advantages of photoelectric colorimetry and some of the pitfalls to be encountered in actual practice and I want to reinforce what he has already said. There is little that can be added, except to tell you a bit of our experience in clinical laboratory work as illustrations of how important it is to exercise great care even with the advent of such wonderful instruments as the readily available photoelectric colorimeter. Might I add that these incidents I am about to relate apply equally well to the older type of laboratory determinations using visual colorimetry or direct visual comparison?

Laboratory determination of non-protein nitrogen in a patient suspected of having undulant fever or Brucellosis revealed a value of 140 mg. %. The blood had been drawn by a physician and added to a tube containing an anticoagulant which had been supplied to the doctor by a laboratory worker. The patient's symptoms were not those of an acute uremia and, hence, the doctor was puzzled. Another sample of blood was drawn in the same manner and the non-protein nitrogen was 160 mg. %. Consultation with the technician performing the analysis elicited the suggestion that perhaps the wrong anticoagulant had been used and that it contained ammonia which, of course, would elevate a non-protein nitrogen perhaps to the high level found. Investigation proved this to be the case. Tubes containing ammonium oxalate had been given to the physician for his blood sample. I have always wanted to congratulate the technician who, through intelligent cooperation, enabled this error to be found. Her teachers too deserve credit for developing not only an ability to follow directions but an understanding of the procedures involved.

Keep your mind open and ever searching for errors such as these. They arise in every field

of human endeavor. But do not let the possibility of error keep you from trying again and again. You can reach the paradoxical state of committing only one error by never doing anything and your lack of productivity will then be your sole error. It is certain that none of us desires to be so perfect at such a price.

Determinations based on the color produced by ammonia and Nessler's reagent have been performed in many laboratories many times. It is one of the most reliable methods of clinical chemistry. Transfer your activities from the normally clean air of the hospital or clinic laboratory to a laboratory where many people work on a variety of problems and the method may be subject to grave error. Our experience has been that even with the use of ammonia-free reagents and distilled water enough ammonia can be absorbed from the atmosphere to alter results seriously. By running a blank determination along with each set of unknowns, correct results can be obtained even if the ammonia content of the air is high. If a bottle of ammonia is spilled in the laboratory then we clean up as much as possible, air out the laboratory and run our determinations as usual but with the correction factor supplied by a proper blank. With the photoelectric colorimeter you do not need to know even the value of this blank. Just set your instrument with the blank in place in the usual manner.

Up to the present, clinical chemistry has required only rough methods of analysis as aids in treatment and diagnosis. Perhaps a great deal of what Dr. Crookshank and I have said in the way of attaining accuracy can be dispensed with as unnecessary for present day clinical laboratory practice. A great many research determinations do involve much greater accuracy than you need in your work today. Remember that some of these will be the determinations you will perform in the future.

The great variety of photoelectric instruments available today show more differences in the shape, size and finish of the cabinet than in basic design. Most of them will give good service over long periods of time if treated with respect, and with a careful operator excellent accuracy can be secured. If your budget will not allow the purchase of a photoelectric colorimeter or even an optical colorimeter, do not despair. Direct visual comparison is still a valuable tool for colorimetric analysis. Learn as much as you can about the newer tools even though you may temporarily be unable to secure them.

Finally, let us not forget the proper care of the instrument should we be fortunate enough to have one for our use. A clean, dry location should be provided permanently. If the instrument is not equipped with a dust-proof cover, one should be purchased or constructed. If you can see dirt on the lens or cuvettes the photocell will also detect it. Photoelectric cells are usually rugged and their characteristics change slowly; however, do not depend entirely on this. Check your instrument with known standards frequently. Do not attempt to repair the galvanometer. Send the entire apparatus back to

the factory should this appear faulty. The source of light may burn out just as all incandescent lamps do. You can always see light in the cuvet receptacle in any colorimeter if the lamp is functioning correctly. Finally, the adjustment dials which usually control potentiometer

circuits may fail to adjust. In this case the potentiometer wire may have corroded or worn out or the rolling contact point may fail to make proper contact. As with galvanometer trouble, we have found it is less time consuming to have the factory repair the instrument.

CAUDAL ANALGESIA

WILLIAM K. LLOYD, M. D.

Anniston, Alabama

FOREWORD

Allow me in this discussion of caudal analgesia to state first that, although I may make a few references to its various usages, I shall stress particularly its use in obstetrics. Furthermore, this is to be considered more a report of my actual experiences than a scientific discussion.

There are those who still believe in allowing women to suffer the pains of childbirth, particularly those so zealous followers of the Bible who try to guide their daily life by its every word. This may be an admirable characteristic but I hardly think the medical profession as a whole, nor the vast majority of patients, appreciates Genesis 3:16 which states: "In sorrow and pain shalt thou bring forth thy first born." At this point I should like to quote Dr. Vaux: "Throughout the ages, men have sought diligently for methods of alleviating pain, particularly that pain which is associated with parturition ... In obstetric practice many known advances have been made in the search for an ideal anesthesia ... The advent of each new drug has been received with suspicion and skepticism ... However, each advance has certainly been a step along the way of total conquest of pain."

I agree with Clifford B. Lull¹ that at the present time there is no definite method for the absolute relief of the pangs of childbirth. That is to say, there is no one method of pain relief that is suitable for every pregnant woman, nor do I believe there will ever be such a Utopian obstetrical technique. Each case must be managed according to surroundings, available equipment, the ability of the attending obstetrician, and the nervous stability of the patient.

In any discussion of agents used I think it should first be decided whether this is a home or hospital delivery, as the most modern techniques absolutely require the advantages of a well-equipped hospital. Having refrained from delivering any babies in the home for over six years, I hesitate to advise in regard to any method of home agents, but suffice it to say that home delivery cases should have some relief and as far as is compatible with safety for mother and child. Chloroform, formerly so widely used, should be avoided as much as possible. Morphine may necessarily have some place in home deliveries, but again should absolutely be avoided unless the attending accoucheur practically knows there will be a lapse of at least six hours between the administration of the drug and the birth of the baby. In making this statement I realize that I may encounter much adverse criticism.

It is very questionable in my mind whether any harm is ever done by the use of the barbiturates. However, even in their use, late experiments have proven a depressing effect on the fetus if given in large doses, and it has been stressed that small doses of barbiturate drugs do just as much good as large ones.

When any form of inhalation anesthesia is attempted, whether in the home or hospital, there is always danger of either death or permanent injury to one or more organs of the fetus.

I am omitting here any discussion of the use of scopolamine, demoral or paraldehyde, although the latter, paraldehyde, was my mainstay until I began the use of continuous caudal analgesia.

CAUDAL ANALGESIA

Caudal analgesia or, as it should more properly be called, continuous caudal anal-

1. Lull, C. B.: Control of Pain in Childbirth, J. Omaha Mid-West Clin. Soc. 6: 33-37, April '45.

gesia first came into practical use only as late as January 1943. Even though experimental work had been done as early as 1903 and was used as a single injection in obstetrics by my friend, Dr. Pierce Rucker, of Richmond, Va., as early as 1927, its widespread use has been only within the last two years or so. It has grown by leaps and bounds as has been shown in the Journal of the American Medical Association, over 110,000 cases having been reported.

What is caudal analgesia? In caudal analgesia, an anesthetic solution is injected into the caudal canal and reaches the spinal nerves via the epidural space. In no sense of the word does it mean an injection into the spinal canal as a great many of the laity seem to think. However, in giving caudal analgesia one occasionally meets with a low hanging dura and obtains spinal fluid. These cases are immediately ruled out, with one exception: if the case had been one chosen for cesarean section naturally one could go ahead and give the appropriate dose as in ordinary sections under spinal anesthesia.

In considering caudal analgesia, as I stated in the beginning, please allow my words to adhere as much as possible to an actual experience in my own cases. I believe time will allow me to touch on three phases of the subject only, and I am attempting to pick those phases which I believe you would be interested in from a practical standpoint; namely (1) indications and advantages; (2) contraindications; and (3) actual technique.

Under indications and advantages I would like to mention: (1) premature births; (2) toxemias of pregnancy; (3) management of the third stage of labor—decreased blood loss (4) resuscitation is hardly ever necessary; (5) the ease of rectal examinations, which nurses quickly learn to make; (6) a definite shortening of the first stage and the first part of the second; (7) the ease of breech deliveries; (8) smaller episiotomies; and (9) rapid convalescence.

Contraindications are: (1) disproportion (unless of course used in cesarean section or unless the labor is a trial one); (2) patients that are so far advanced in labor that birth appears imminent (average time of technique 40 min.); (3) patients who are apprehensive, nervous, or desirous of being

asleep when baby is born; (4) gross deformities or disease of the spine or central nervous system (anatomic defects, "leaky roof," pilonidal cyst); (5) extreme obesity (hard to do—this is where the catheter technique with Irving introducer comes in); (6) local infection, bacterial or fungus at site of injection; (7) obstetric complications: a. placenta previa, unless used for immediate cesarean section, b. abruptio placenta, c. nulliparous patients with floating fetal head, d. in birth of monstrosities and predetermined dead babies; (8) cases of low blood pressure; (9) history of sensitivity to the analgesic agent; and (10) either prospective parent not favorable.

TECHNIQUE

First, a few remarks about *how* to learn the technique. This can be done in several ways. Until November 1, 1946 there was a school at Philadelphia where Drs. Vaux, Hingson and Lull taught the method. This school is now located at Memphis. One can become fairly well versed in the technique during a two-weeks' course. I learned it, at least so I think, the hard way but would like to pass this on to you for whatever it might be worth. In April 1943, Bob Hingson, whom I had known since childhood, in company with Waldo Edwards, dropped by my office on their way to New Orleans. I had already been reading the various reports of their work, both in scientific and lay magazines. (Just here, let me inject the thought that "painless childbirth" was published in lay magazines entirely too soon. The reasons are obvious to any thinking medical man. Patients were asking for it themselves. I have ideas as to who caused this mistake but I shall not take time to dwell upon them.) They advised me to get out an old skeleton (I got three) and to refresh my mind on the actual anatomy of the posterior wall of the pelvis. Second, if I had a friendly undertaker to get him to call me while bodies were being prepared for burial. The only technique one needs for the malleable needle technique is the needle itself, a 10 cc. Luerlok syringe and a bottle of methylene blue solution. Practice outlining the sacral triangle and placing the index finger above what you think is the sacral hiatus, insert the needle, following standard directions (that is as to degree of slant, etc.) and when you think you are in, inject the methy-

lene blue. A small incision made over the central part of the sacrum will reveal, by the blue staining, whether you have been successful or not. Of course this is the grapevine route. I did 22 of these before I attempted to use it on a living subject. Unfortunately we do not get permission for very many autopsies at our hospital or else that would have been the preferred method.

On Living Subject: My first attempts were always done by putting the patient in the knee-chest position, which, in difficult obese patients, I still occasionally use. However, with the patient lying on her left side, after one has done his first 15 or 20, one usually encounters no difficulty with this position. I have employed metycaine solution, 1½ per cent, in the vast majority of my cases, but novocaine, procaine and nupercaine have been used also by others. Outside of metycaine my only other experience as to the agent used has been with pontocaine, one per cent solution. Pontocaine certainly has one big advantage over metycaine. The injection lasts for a much longer period of time.

Notice the temperature of the balls of the feet. Most women have cold feet, and these *must* get hot if you are in. If I feel I am in the caudal canal I inject 8 cc. and wait four minutes. This gives you further assurance (outside of not having obtained any free spinal fluid) that you are not in the spinal canal. Some men wait longer; I occasionally do when dealing with a primigravida and feel delivery is far distant. If the patient can still wiggle her toes, certainly after eight minutes, you can rest assured you are not in the spinal canal.

Carefully palpate with your left hand over the sacral triangle while making all injections with your right hand. The presence of a tumor mass naturally means that you are episacral and you had just as well then and there withdraw your needle and make a second attempt. After the above lapse of time I inject twelve more cubic centimeters unless the case is one where delivery seems imminent, in which case I complete what we call the original dose of 30 cc. by injecting 22 cc. Within 15 to 20 minutes the attending nurse, with her hand on the patient's abdomen, should be able to notice contractions beginning before the patient gives any evidence of pain, likewise feeling them after

she complains. In other words, by this time, the patient is only feeling the "peak" of her contraction. Within five to ten minutes more, usually all pain has gone.

Just here, let me tell you about one early case I had. This was a darkie who had had four labors with "nuthin" to help her. When relief was obtained she said, "Lawdy doctuh, I ain't gwine haf this baby, you'se done the wrong thing, you'se done stopped all my pain." It so happened, naturally with her being a multipara and rather late in labor when I got caudal started, that it was not very long, about an hour and a half, when a dollar's worth of caput showed. When I delivered her baby with low outlet forceps it was hard to convince her that the child was her own. In fact, she had to place her hands on her own abdomen before she would believe it. This is just one of the many amusing occurrences in using caudal analgesia.

My actual experience consisted in giving 523 caudals. Most of these patients were private. I am just beginning to use the ureteral catheter technique, having used it in only seven cases. It has a particular advantage in the very obese.

Table I, which follows, summarizes my experience with the method.

TABLE I

Total cases	523
Number with complete relief of pain	492
Number with partial relief	14
Reasons for incomplete relief:	
1. Unilateral effect (most occurred before I had learned to rotate the needle).	
2. Failure to get in.	
3. Three cases of low-hanging dura and so entering the spinal canal.	
Number considered as failures	6
The complete failures, some of which would overlap some of those above, were 6. In addition to the foregoing reasons, there were three cases of so-called "leaky roof." Two of these three I afterwards proved by x-ray, and the other I felt was the same condition clinically.	

Complications to mother:

1. Immediate reactions following injections: oversensitiveness to the drug itself, 3 cases; partial circulatory collapse, 5 cases; in one case the needle was passed at too great a vertical slant, going through the sacrococcygeal ligament; and rectal examination revealed the needle in

the presacral space but fortunately did not pierce the rectum. There were no complications. One abandoned caudal.

2. Number of cases with fall in blood pressure exceeding 20 points systolic (most of whom were toxic)—23.
3. Increased nausea—estimated at 30 to 35.
4. Infection at site of injection—2. (There have been none since routine use of sulfathiazole ointment locally was instituted.)
5. Broken needles, none.
6. Postdelivery headache—8.
7. Neurologic sequelae, none.

Complications to fetus:

Resuscitation problems. Compared roughly with 500 previous deliveries by other methods, there was far less occasion to use artificial means of resuscitation—the vast majority of the babies crying immediately.

Maternal mortality:

One mother was lost. Autopsy could not be obtained but circumstances seemed to indicate a flare-up of an old unilateral salpingitis. The patient developed pelvic peritonitis.

Fetal mortality 12

None of the deaths could be attributed to caudal analgesia. Cerebral hemorrhage, 2; atelectasis, 1; erythroblastosis fetalis, 3; prolapsed cord, 1.

Average interval between induction of analgesia and delivery, 6¼ hours.

Observations regarding blood loss: No careful measurements were made but, on the whole, it was noted that there was far less blood lost by this method.

I believe that, in competent hands and with excellent facilities, continuous caudal analgesia is a safe and wise procedure. One should certainly remember the contraindications to its use, should make up his mind to familiarize himself thoroughly with the technique before attempting it on a live subject, and then go ahead. Five years from now, maybe in less time, something better may be devised. Just as Dr. Vaux said: "The advent of each new drug is received with suspicion and skepticism," so I truly believe this method has. Constant improvements are being made all along the way. We are learning more about it, but until some fundamentally new development occurs continuous caudal anesthesia is my answer in the management of the vast majority of labors.

ADDENDUM

Since reporting the above cases I have used continuous caudal analgesia in 308 additional cases, a total of 831, with very much the same success and proportionate failures as given in foregoing paragraphs—the only marked difference being that I have used pontocaine in a great many instances, not particularly because I have found it less toxic but because it is much more lasting per dose. Moreover, a much smaller total amount of solution is needed to produce the desired effects.

Thoracic Surgery—Bronchiectasis still continues to be one of the most important surgical conditions of the thorax. Unlike lung abscess, there is little that can be done to prevent this disease and, once established, it cannot be cured medically. Surgery does offer an excellent cure for these patients; even those with widely disseminated disease can now be managed satisfactorily from a surgical standpoint. It is absolutely essential at the beginning of the management of bronchiectasis cases to obtain a perfect and complete bronchogram to determine accurately the exact extent and location of the disease before any plan for its surgical eradication is carried out. Too many of the failures are due to an initial incomplete visualization, resulting in an inadequate surgical removal of the disease, which is followed by failure to relieve the patient's symptoms. If the disease is confined to a single lobe, lobectomy is the treatment of choice. If the disease is bilateral or disseminated in various lobes on both sides, the exact segments of the lobes involved may be identified and a planned, staged resection of these segmental portions of the lobes carried out, preserving the normal segments of the lobes so that the patient eventually will have sufficient functioning lung to carry on normally. This is a distinct advantage and definite progress in the management of the disseminated types since multiple lobectomy for disseminated disease usually left the patient seriously handicapped by his relatively small, residual, functioning lung.

In either case, that is, in either lobectomy or segmental lobectomy, the patients can be brought safely through the multiple stages of operation by careful preparation with penicillin intramuscularly and by aerosol preoperatively, a properly administered intratracheal anesthesia, careful control of shock at all times, meticulous individual ligation of the hilar structures, and all aids to rapid reexpansion of the lung and the prevention of residual infection by the intensive use of penicillin postoperatively. This treatment has decreased considerably the incidence of postoperative infection and fistulas and makes these procedures extremely satisfactory in the management of both lung abscesses and bronchiectasis. —Adams, *Texas State J. Med.*, November 1947.

CHRONIC MASTOIDITIS

E. R. NODINE, M. D.

Montgomery, Alabama

It has been a well known fact since 1935 that the occurrence of acute mastoiditis has fallen off to practically nil. It is a rare thing nowadays to see a case of acute mastoiditis. This has been due to many factors. The most important element contributing to the decline of the acute cases is the use of the sulfonamides and penicillin. These drugs have made it unnecessary to perform myringotomy which was so often done in the past, and apparently under this treatment the ears returned to normal. However, there is a penalty attached to this rapid return to so-called normalcy. It has been the observation of many otologists that there have been frequent subsequent flare-ups of the original otitis media. This would be followed very frequently by spontaneous rupture of the drum with slight discharge. Sometimes the drum would heal and sometimes it would not, and as a result there would be a subacute chronic mastoiditis with a more or less purulent discharge. This could be verified by x-ray. The case would drag on in spite of local treatment and would develop into a full blown chronic mastoiditis. This has led pathologists to believe that the newer drugs have simply masked the symptoms and attenuated the bacterial invaders but not quite annihilated them.

From this it is easy to see how the offending organism can slowly extend from the tympanic cavity and invade the surrounding mastoid cells. The patient suffering from a chronic mastoiditis can be compared to a man walking around with a hand grenade in his pocket; the catch might slip and it will explode some day. Similarly the lurking bacteria in the mastoid cells may invade the surrounding venous and cranial structures. It is apparent from this that the patient who is suffering from a chronic mastoiditis should be relieved of his trouble. The only way this can be done is by a radical mastoidectomy. Too many otologists have been afraid to attempt this operation in the past for fear of not getting a dry ear. In the light of newer, present-day techniques this should not be a deterrent.

This was very forcibly brought home to me while training for fenestration surgery under Dr. Lempert in New York. He has made one of the greatest advances of all time in otologic surgery by perfecting the endaural incision as an approach to the mastoid bone. By the use of this incision all the old clumsy dressings, customary in the postauricular approach, are abandoned and any external evidence of surgery has disappeared under a week. Also, by his method of using a dental drill under local anesthesia, postoperative recovery is so rapid that the patient is out of the hospital in from 3 to 4 days. A dry ear can always be obtained if the following structures are cleared and visualized at the operation. All mastoid cells must be exenterated from the hard angle to the root of the zygoma to the tip. The necrotic ossicles must be removed; the cochlear visualized along with the facial canal. The orifice of the eustachian tube should be curetted and the tensor tympanic muscle removed from the canal. Only by thorough cleaning and visualizing these structures can a dry ear be obtained as an end result. The cavity, after creating a Panz flap, is packed with sulfathiazole gauze which is removed after 5 or 6 days and the wound, thereafter, is daily cleaned and dusted with sulfathiazole powder and zinc peroxide, equal parts. In the past, too little attention has been paid to the eustachian tubes, postoperatively, in these cases. The eustachian tubes should be inflated and iodine powder (Sulsberger) insufflated from time to time. If there is any lymphoid tissue around the orifice, and there usually is, this should be reduced by radium emanations.

From the above it can be readily seen that a dry ear can be obtained in practically 100% of the cases treated, with very little discomfort to the patient and probably much more safety than going on for years with a dangerous ear exuding a foul discharge.

Although roentgenograms play an all important role in objectively discovering and delineating tuberculous lesions, they will never be accurate enough to supplant sound medical judgment. —R. V. Platou, M. D., *Am. Rev. Tuberc.*, April 1947.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham
C. E. ABBOTT Tuscaloosa
JOHN L. BRANCH Montgomery
D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

January 1948

THE PRESIDENT'S PARAGRAPH

THE FIFTY YEAR CLUB

At the meeting of the Association in Mobile in April, the President desires to recognize publicly the physicians of Alabama who have been in practice for fifty years or longer. This will be a very modest gesture to honor those of our number who have given so much of themselves in service to suffering humanity. A "Fifty Year Club" should be organized, to meet annually during the time of the State Medical Convention. Only those physicians who are willing to be recognized in this manner will be included among those celebrating the Golden Anniversary of their Medical Careers. Please send your name and address to the President of the Association, or the Secretary at 519 Dexter Avenue, Montgomery.

* * *

THE MOBILE MEETING

It will not be long before April the fifteenth, when the State Medical Association convenes for its annual meeting in Mobile. The last meeting in Mobile was in 1941. Special effort has been made to present a strong and important program for this convention. Begin now preparing for this meeting. In a later communication, more will be said about the program. The members of our Association must show the mem-

bers of the Mobile County Medical Society how much we appreciate their invitation to return to this splendid convention city. It will be a disappointment if we have less than 600 in attendance.

J. P. Chapman

CARBON TETRACHLORIDE

"Carbon tetrachloride was first used in medicine almost a century ago, its introduction being ascribed to Simpson, the discoverer of chloroform. Because of its toxic properties, its course as an anesthetic agent was brief and it was not employed clinically again until 1921 when it was used to eradicate hookworm. Its clinical usefulness is still confined to this latter field where it has long been employed with little evidence of undue toxicity. However, the compound has been widely used in industry as a fat solvent; its low cost and noninflammability made it adaptable to a wide variety of uses. In the industrial field its toxic properties have been well controlled, for laws in most states require special precautions to keep the concentration of the vapor in working spaces less than 100 parts per 1,000,000 parts of air. As a result, casualties in industry have been infrequent. The free use of carbon tetrachloride by military personnel and its employment as a home dry cleaning agent, however, have led to many instances of intoxication and death."

The above is the first paragraph of the brief but excellent article by Snell¹ concerning the dangers involved in the use of this chemical. The Rochester investigator goes on to tell us that "carbon tetrachloride is a general protoplasmic poison. It is a depressant of the central nervous system and has a special toxic effect on the renal tubular epithelium, the hepatic parenchyma and the myocardium. The lungs also may show the irritative effects of the inhaled gas, and pneumonic changes are not uncommon. It is generally agreed that alcohol ... greatly increases the toxicity ...

"The clinical symptoms which follow immediately after exposure are essentially those of inebriation. There may be delirium, coma or convulsions. Headache is often severe and persistent; abdominal symptoms

1. Snell, Albert M.: Carbon Tetrachloride Intoxication Treated by Peritoneal Lavage: Clinical Aspects. Proc. Staff Meet., Mayo Clin. 22: 327 (Aug. 6, 1947).

appear within twenty-four hours, usually consisting of diffuse cramping pain, nausea, vomiting, hiccough and diarrhea. The vomitus may have a coffee-ground appearance. There may be fever and even chilling.

"Jaundice and enlargement of the liver or both appear within a day or so after exposure; the severity and persistence of these symptoms depend on the degree of exposure and the general condition of the patient. Renal involvement may or may not be immediately apparent; oliguria, albuminuria and hematuria often occur and progress in fatal cases to anuria. Hypertension may develop within a week after exposure and persist for days; it gradually declines as renal function improves . . .

"Patients who recover may not have any detectable residues of renal or hepatic damage within a month's time. Rarely there is subsequent evidence of cirrhosis, of anemia or of involvement of the peripheral nerves.

"Diagnosis is rarely difficult; the combination of serious hepatic and renal damage in a patient who has used or been exposed to industrial solvents is highly suggestive. In most cases there has been ample laboratory evidence to support the clinical impression of the hepatorenal syndrome. Probably the earliest objective evidence of exposure can be obtained by a thymol turbidity test . . .

"Prognosis is uncertain, since individuals appear to react differently to the toxic agent; the previous use of alcohol may be the determining factor in some cases. Other factors are undoubtedly involved as well; possibly the glycogen content of the liver at the time of exposure is important . . . Perry described an instance of mass poisoning of eighty-eight soldiers; only five required subsequent hospitalization and, of these, two died. Dillenberg and Thompson reported a similar incident aboard a submarine. Twenty men were exposed to high concentrations of the vapor; eleven showed evidence of renal irritation, four were seriously ill and one died. Why some patients fare so badly from single exposures while others escape without incident is difficult to explain."

Snell goes on to inform us that "no special treatment for those exposed to carbon tetrachloride is known . . . Plasma or albumin given intravenously may favor diuresis in

patients presenting the nephrotic syndrome following exposure. The intravenous administration of glucose is essential for the vomiting or uremic patient . . . The maintenance of a proper electrolyte balance may be difficult and may require constant attention to blood electrolyte levels and the administration of appropriate electrolyte mixtures.

"The principal danger in human beings is renal insufficiency and subsequent cardiac dilatation and failure. Hence it would appear that early recourse to peritoneal lavage or the use of an artificial kidney would offer the best prospects when anuria and azotemia are present. Since both hepatic and renal lesions may be reversible, such radical measures seem entirely justified."

Snell has rendered a real service in calling our attention to the toxic effects of this chemical, the use of which seems to be on the increase. Its dangers have long been known to the trades and industries in which its use has been customary and, as the author states, laws have been passed with the hope of lessening or avoiding them. But, now that carbon tetrachloride is being used more and more as a home dry cleaning agent, it is probable that many more cases of poisoning due to its use will be reported, for those who use it in the home are more than apt to be unaware of any risks likely to be incurred and to know little or nothing of the need for adequate ventilation. And it would seem that the medical profession must become increasingly aware of the possibility of encountering patients suffering from carbon tetrachloride poisoning, especially persons who work in commercial cleaning establishments where the ventilation may be faulty at times.

THE NURSE SITUATION

That there is a shortage of nurses is undeniable. The degree of the actual shortage is probably debatable. The difference of opinion as to the degree of shortage is based on the interpretation placed by different authorities on the duties of the professional nurse.

A committee has been appointed by the President of the American Medical Association, Dr. E. L. Bortz, to study the problems of the situation, and is now devoting its efforts to a consideration of measures for im-

mediate relief, as well as relief in the future. The committee is interesting itself also in the economics of the problem. It is our belief that the medical profession can aid in at least two of these phases, if not all.

Frequently young ladies consult their physicians for advice as to entering the nursing profession. We can aid in this request by calling to their attention the great happiness that comes to those entering the professions of the healing arts. It is a noble profession. Great respect and admiration are paid the nurse. She comes in close contact with people in distress.

An intensive drive is to be made during the coming year by the American Hospital Association in its endeavor to increase recruitment. We can aid in this important phase.

The medical profession can aid immediately by advocating the return to full time or part-time duty of graduate professional nurses. It can assist also by not expecting nurses to do non-professional duties, and by doing for itself many of the things now delegated to nurses.

The problem of nurse recruitment is the direct responsibility of all branches of medicine: the doctors, hospital associations, and the nurses. We must do our part. Never let it be said that the doctors fell short of their responsibility in the attempt to correct this serious problem.

SECTIONAL MEETINGS, AMERICAN COLLEGE OF SURGEONS

Dr. Arthur W. Allen, President of the American College of Surgeons, announces the scheduling of six sectional meetings in 1948, for Fellows of the College, the medical profession at large, and hospital personnel. Each meeting will be two days in length and will include conferences for hospital personnel as well as sessions for the medical profession. The showing of medical motion pictures will begin each day's program at 8:30 a. m. There will be luncheon meetings each day and a dinner meeting on the first evening. The latter will be followed by a symposium on cancer. Panel discussions on scientific subjects, led by internationally known authorities in each field of surgery, will be held each morning and afternoon. The list of meetings follows:

Toledo, January 20 and 21—Commodore Perry Hotel

Atlanta, January 26 and 27—Ansley Hotel

Oklahoma City, January 30 and 31—Oklahoma Biltmore Hotel

Denver, March 1 and 2—Cosmopolitan Hotel

Minneapolis, March 15 and 16—Hotel Nicollet

Halifax, May 17 and 18—The Nova Scotian

Among the subjects to be discussed at the scientific sessions will be fractures of the upper and lower extremities; pediatric surgery; importance of the use of blood and fluids and of adequate nutrition in surgery; early diagnosis and proper treatment of cancer; organization and functioning of cancer clinics and cancer detection centers; intestinal obstruction; management of wounds, surgical incisions and fresh traumatic wounds; urologic surgery; plastic surgery; vascular surgery; and panel operations on elderly patients, with special reference to the reduction of the surgical risk.

Among the subjects which will be discussed at the hospital conference will be the increasing use of hospitals; expansion of hospital facilities; higher standards of training for hospital administrators; improvement in personnel policies; increasing cost of hospital service; better rural hospital service; coordination of hospital with other health and welfare activities in the community; Blue Cross and medical service plans; decreasing average days' stay in hospitals; participation of hospitals in cancer control; advances in physical medicine; increasing importance of chemotherapy; nutrition in relation to disease; changes in nursing service; improved status for the general practitioner; decreasing rates of deaths, infections, and complications; care of chronic and psychiatric patients; advances in professional services; medical staff organization; the professional audit; and the point rating system.

The American College of Surgeons has a fellowship of 15,500 surgeons in the United States, Canada, and other countries. Dr. Irvin Abell of Louisville is Chairman of the Board of Regents. Dr. Malcolm T. MacEachern and Dr. Bowman C. Crowell of Chicago are the associate directors. The College was founded thirty-five years ago. Headquarters are in Chicago.

POSTGRADUATE ASSEMBLY, ATLANTA

The Fulton County Medical Society announces a three-day postgraduate assembly to be held in Atlanta January 28, 29 and 30, 1948, immediately following the Regional Meeting of the College of Surgeons. Because of the College of Surgeon's meeting, surgical subjects will not be emphasized in this assembly. The program has been arranged to help the average doctor keep abreast of the newer developments, but it is believed it will offer something of value to every man and woman practising medicine in the Southeast.

DR. GRAY IS PARKE-DAVIS MEDICAL CONSULTANT

Announcement that Dr. J. P. Gray has joined the staff of Parke, Davis & Company in the capacity of Medical Consultant to the

Sales and Promotion Division has been made by Harry J. Loynd, vice-president of the Company.

Dr. Gray comes to Parke-Davis with an exceptional medical background. A graduate of Johns Hopkins University with a M.D. degree, and of the Harvard School of Public Health with an M.P.H., he served in public health work for many years, including posts with the United States Marine Hospital in New Orleans, the state of California and the city of San Francisco, and the Michigan Community Health Project of the W. K. Kellogg Foundation. He also is an educator, having lectured in public health at the University of California, served as dean of the School of Medicine of the Medical College of Virginia in Richmond, and also as dean of the School of Medicine, University of Oklahoma, and superintendent of the University hospitals.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE DOCTOR IN A CHANGING WORLD

W. FRANK JORDAN, M. D.

Vice-President, Northeastern Division

Member, Committee on Medical Care and Public Relations

The Medical Association of the State of Alabama

Huntsville, Alabama

The medical profession has taken a lot of abuse lately, so today I want to praise the doctor, criticize and chastise the profession, and even make a weak defense of it. If I offend you, I am sorry, if I make you mad I won't be regretful, for I challenge you to stand up and fight; fight to save yourself, for you are "The Doctor in a Changing World"—a lesser god, falling from your high place of honor, deprived of your freedom, crippled in your high endeavor, and robbed of your glory at the climax of your victory over disease.

You will soon become a mere number in the files of a government bureau in Washington. If you have read the signs along the Road of the Changing World, you already

Read before the Northeastern Division of the Association, Anniston, Oct. 30, 1947.

know this is a grave moment in the history of medicine, and you can no longer go the even tenor of your way and avoid the wreck that is just ahead.

I love the name Doctor, the story of his long struggle to overcome disease, his service and sacrifice, but I love more his freedom and the promise of his genius, of miracles yet to come.

The surgeon, with his calm courage and cool skill, has dared to invade sacrosanct places: the deep recesses of the brain and the inner chambers of the heart and has caused cures. In doing this he has pushed back the frontiers of medicine and added knowledge of a valuable and life saving kind. He is the herald of these miracles that can be promised.

The specialist, with his perfected learning in his limited field, is able to remake the horrible faces come home from war, to save or remake an eye that is blind and cause it to see again. He is a valued asset to our era of civilization and we need him.

The family doctor, who cannot be left out of the picture, but who, in a changing world, has been pushed aside—it is he of the kind heart and love of humanity who has been a good friend. At midnight he stands by “when tired seaworn ships put into the last harbor and drop anchor.” He gives ease to pain and solace to loved ones, and before the dawn he goes again to assist at the launching of tiny new ships and watches over them tenderly as they start out on life’s stormy voyage. He is the doctor for whom the finest words in language have failed to pay a deserved tribute, and today we know that he is the strong tow-line to hold the outward tide of public opinion.

These men of medicine are the flower of our civilization, and yet, when they make up the American Medical Association, they are maliciously called the “Medical Trust,” and the public is encouraged to hate them and charge them with the crime of indifference to the need of wider distribution of their services, unwilling to answer the calls of a sick world.

Medical science has outrun the politico-social scientists, who now come up with an absurd claim: that they are the only people who are qualified to umpire and distribute our product of skilled service. It is they who want to cut down the tree that produces the good fruit and to raise, instead, trees for a rotten kind.

We doctors have lived serene in the stratosphere of high endeavor far removed and indifferent to the ferments of the workaday world and confident of the security of our profession because of the nature of its services. It took a decision of the Supreme Court to shock us into a reality of our status. Our ethics had transgressed the rules of business, and as a Big Business, without respect for others, we are considered to be subject to governmental control. This marks the beginning of the end and the cross-roads of medical history for the free practice of a science. The Wagner-Murray-Dingle Bill is the “Big Giant” of Government that now faces us. I challenge you to

stand up and *Fight*. This Bill, conceived in the iniquity of taxation, born by the high forceps of intrigue, is now being sold to the people in the false surmise that they will get something for nothing.

The American public likes a good scrap and will applaud the fight. A baseball series almost stops the wheels of business; a prize fight or football game draws a million dollar gate.

Free medicine is now on the defensive and cannot long endure as such unless we wage a strong counter attack and put up a real fight. Your leaders today are well aware of the serious situation and have platted the strategy for an “all out” and you are now and will be called to the colors to do your part. We must not, we cannot refuse them. I charge you with timidity in medical political citizenship in the past. You have failed to claim for the indigent sick and the medical needy a fair share of local, state and national tax dollars. Rather, you have borne a back-breaking burden of their care without complaint, and this is no longer a virtue nor a credit to your sagacity.

Our Government, rich beyond its ability to spend, has taxed to exceed the avarice of a Caesar, even down to the \$12.00 a week level, giving away billions to foreign friend and foe in need, and with pious halleluiahs; but for our own needy sick can only offer more and better tax laws on every one to meet a minority need. Where are the patriots and where are the statesmen to save medical freedom? The men of medicine with the pooled brains of doctors have conquered the impossible in disease. They have tracked down the captain of the hosts of death and his whole company of killers of men and rendered them impotent—all within the memory of many of you doctors here. Let these same brains be focused on a new job and I warrant the victory.

The proud doctors of England are bowing their heads on the gallows of state medicine, and we are the sheep next in line, but let history show we held that line, struck down the Giant, the lustful invaders of our freedom, and stood up as free men. The American people are not in revolt against their doctors; this thing is aided and abetted by people who have rich booty to gain from our province. The American people have not realized that they, too, will have lost in

freedom. It is our duty to show them. It is unbelievable, the faith and confidence they have in the doctor: "My Doctor said this"; "My Doctor said that"; "My Doctor said I need an operation"; with never a thought that it might be tinctured with a hope of financial gain, and they do not think it will be any less under socialized medicine. Or will it?

The main objective for our attack is against the citadel of the cause and in this every man here can play a vital part. That walled-in city is the High Cost of sickness, and we believe the best answer to that is voluntary insurance. This however, does not always sell itself and until now has not been readily available.

The American people are the best insured on earth, except for the cost of sickness and it is now our job to see that they get it; and the time is short. Sell that idea and reap the reward. Our pressing concern is speed and action. We are 20 or 30 years behind in a public relations campaign but really we have had no serious need for it till now. In the past it took care of itself because we were not a business. Our meetings are always built around a better knowledge and better cure of disease. Certainly there is never any mention of business methods or medical-political citizenship, or ways to make larger dividends. Only now is public relations a topic for thought.

In my medical school days the nearest approach to it was one day at the end of senior term and a few days before graduation. The Professor of Medicine, Dr. James Wilson, a Prince of the Royal Family of wise men, paused, looked up with a smile, and said: "Young men, you will soon be going out into the world to practice what you have learned here. May I say to you, always strive to perfect your learning and skill, think not of the reward, for if you give the best that is in you to the people you serve, your reward will be both riches and honor." This I think is a fine motto for every doctor.

The medical colleges today are sending out the finished product in doctors splendidly equipped to treat the sick. I wonder if would it not be a help to add a short course in medical economics and public relations—Doctor vs Doctor, as well as to place emphasis on the other qualities and high ideals of service that have given the profession much of its glories of the past.

Our only weakness today is the assumption of defeat and deliberate unwillingness to meet the issues with which we are now confronted and do something to correct the faults, and fight. If fighting is beneath your dignity, forget it. The glove of insult is now slapped across your face and I do not think you are cowards.

In conclusion, I want to say: If it is true, as charged, that the medical profession is rife with commercialism, has forsaken its high ideals of human service and is unwilling to change, has fallen down to worship the Golden Calf at the sign of the dollar, protecting a black market and profiteers, then we have brought down on our heads the just wrath of the people and should not complain if we are forced to wear the yoke of government control.

If on the other hand, we are willing to clean our house, take anew the oath of Hippocrates, correct the faults to which we confess, propose and implement the cure, then we can stand and fight, and win the day for "The Doctor in a Changing World."

Poliomyelitis—On the basis of evidence that the virus may be recovered from the pharynx, protection of children from exposure to infected persons and from crowds during epidemics may be justified but it seems unlikely that droplet dissemination will prove to be the primary method of transmission. Control of spread of the virus from one intestinal tract to another may be a more efficient approach. As in typhoid, healthy carriers have been recognized and patients who have recovered from either the paralytic or non-paralytic types of disease carry the virus in their intestinal tracts for various periods. It presents a much more difficult problem than typhoid, however, because the virus can be identified only by animal assay and that is too expensive and time-consuming a procedure to be carried out on a large scale. Our current methods and duration of isolation are arbitrary and not based on scientific evidence.

Attempts to control exposure by nasal sprays have not proved efficacious. They were based on the assumption that the primary portal of entry in man, as in the rhesus monkey, is through the olfactory tract and that assumption is no longer valid.

Considerable attention has been given recently to the problem of tonsillectomy in relation to poliomyelitis. Children who develop the disease shortly after tonsillectomy are more likely to have it in the fatal bulbar form and the incidence may be higher among this group. Until better evidence that it is a safe procedure is available, it would seem advisable to avoid tonsillectomy during epidemics.—Lippard, *New Orleans M. & S. J.*, Dec. '47.

MEDICAL COLLEGE OF ALABAMA

CLINICOPATHOLOGICAL CONFERENCE

Reported by

Roger D. Baker, M. D.
Professor of Pathology

Conducted by

James B. McLester, M. D.
Associate Professor of Medicine

This case is not only a problem in clinical differential diagnosis but is also a problem in the nature of the cirrhosis accompanying the gummata.

Dr. Paul Burleson, Junior Resident in Medicine: This 62-year-old colored female domestic worker was admitted to the Hillman Hospital on two occasions during this year. First admission, May 17, 1947 to July 9, 1947.

Chief Complaint: "Nausea and vomiting for three days."

Present Illness: Patient stated that her health had been poor for ten years prior to admission. She gave a vague history of pain after meals, and vomiting on occasion, during this time. For the past 3 or 4 months, however, these symptoms had become much worse, and more frequently recurrent. For the past 3 or 4 days she had vomited following each meal, and had vomited some blood on several occasions. Also, she had noted some tarry stools during this time. There had been varying degrees of pain associated with these bouts of vomiting. Her appetite had been poor, and there had been some weight loss. No history of food dyscrasia, no diarrhea, and no jaundice had been noted.

Past History: Usual childhood diseases. She had had pneumonia once. Fractured right arm as a child. She had had "whites" but denied any venereal disease.

Family History: Father and mother were both dead of unknown causes. One brother had died of pneumonia. Two sisters and one brother had died of unknown causes. No history of cancer, tuberculosis, diabetes, heart or kidney diseases.

Marital History: Married once but separated from husband. Gravida II, Para I. One miscarriage at about 4 months. One normal child.

Review of Systems:

Head: Occasional headache, and associated dizziness for past two years.

Eyes, Ears, Nose, Throat: Non-contributory.

Cardio-respiratory: Slight cough of several months' duration. Otherwise negative.

Gastro-intestinal: Abdomen slightly larger for the past two weeks. Otherwise normal, except for present illness. (See above.)

Genito-urinary: Occasional dysuria. Urine had "pink color" several times during present illness. Nocturia 2 or 3 times.

Menstrual: Menopause 10 years prior to admission, no vaginal bleeding since that time.

Physical Examination: Temp. 98° F. Pulse 120/minute. Resp. 20/minute. B. P. 115/75. Patient was a well-developed, but poorly nourished, elderly, colored female, lying quietly in bed in no apparent pain or distress, but she appeared chronically ill.

Head: Normal size and contour.

Eyes: Several macular areas on right cornea. Pupils round, regular and equal, and reacted to light and accommodation. Fundus examination revealed early sclerotic changes in left eye. Right fundus not visualized.

Ears, Nose, Throat: Essentially negative, except for pale mucous membrane.

Neck: Normal. No abnormal masses or pulsations.

Chest: Normal bony contour. Breasts small in size and atrophic.

Heart: Normal in size. Rate rapid, rhythm regular, no murmurs audible.

Lungs: Entirely clear to percussion and auscultation.

Abdomen: Smooth and flat. No scars visible. The liver was enlarged about 8 cm. below the costal margin. It was firm, irregular in shape, and non-tender. No other masses were palpable. No fluid wave was elicited.

Pelvic: Normal marital introitus, slight vaginal discharge, cervix clear, both adnexa clear. Fundus normal in size, freely movable.

Rectal: Good sphincter tone. No hemorrhoids. No abnormal masses. Stool on glove finger was tarry in color.

Extremities: Normal.

Reflexes: Physiological.

Laboratory Examination: (On admission)
C. B. C.: R. B. C. 2,240,000; hemoglobin 5.7 gms.; W. B. C. 7,250; Lymphocytes 12, Monos 6, Segs 75, Eosin 4, Basophils 1, Stabs 2.

Urinalysis: Normal, except for slight trace of albumin, 4+ sugar (following intravenous medication), occasional red blood cells, 5-10 white blood cells/HPF. Acetone negative. Benzidine positive for occult blood.

Icterus index: 9 units.

Total protein: 7.2. Albumin 2.18. Globulin 5.02. Albumin-globulin ratio 1/2.3.

Fasting blood sugar: 82 mg. per cent.

Stool: Positive for occult blood.

Cephalin flocculation: 4+.

Bromsulfalein test: 30 minutes, 40% of dye remaining in serum; 25 minutes, 30% of dye remaining in serum.

Kahn: Positive.

Gastric analysis:

	Time	Free HCl	Total Acid
1st Specimen	Fasting	0°	†QI
2nd Specimen	15 minutes	0°	16°
3rd Specimen	30 minutes	40°	63°

†Quantity Insufficient.

X-rays: Chest: (On admission) "Apical caps noted bilaterally. The perivascular markings are prominent throughout both lung fields and there is an area of increased streaking within the right lower lobe, and blunting of the costophrenic angle. These findings are suggestive of an early pneumonic process in the right lower lobe, pleuritic involvement."

Barium enema: (On admission) "The barium flowed with ease from the rectum to the caecum, but none entered the terminal ileum. There was moderate spasm of the descending colon, but no organic lesion was visualized. In the proximal portion of the

ascending colon, just distal to the caecum, there are two small out-pouchings of barium, which gave the appearance of small diverticula. Examination was repeated on 4-24-47 and the same lesions were visualized on both examinations. A small amount of barium is noted just medial to the caecum, which appears to be within the appendix, but could possibly be within the terminal ileum. Impression: Diverticula of ascending colon."

Hospital Course: On admission the patient did not appear acutely ill and was treated conservatively, her dehydration being treated with intravenous glucose, and her anemia with whole blood transfusions, while the diagnostic data were being accumulated. Five days after admission, however, her abdominal cavity suddenly became markedly distended with fluid. A paracentesis was performed the following day, and 200 cc. of straw-colored fluid was obtained with some difficulty. This specimen was sent to the laboratory and was found to contain 14 white blood cells per cubic mm., 100 per cent of which were lymphocytes. Specific gravity was 1.005. Total protein 480 mg. per cent. Bacterial culture was negative after 48 hours. Following this paracentesis she continued to drain some fluid through the paracentesis opening. Her condition remained about the same during the next two weeks, during which time she was treated with repeated plasma transfusions.

Chest x-ray was repeated, and showed evidence of pleural effusion on the right side. A G. I. series reported: "The esophagus showed no abnormality. The stomach was displaced to the left and all of the loops of the intestines were displaced to the left by the enlarged liver. No organic lesions were noted in the stomach or duodenum and the duodenal loop was not apparently widened. Films at hourly intervals revealed normal motility through the small bowel, and no deformity of the terminal ileum. At the end of five hours the head of the barium meal is in the splenic flexure. Impression: Enlarged liver. Pleural effusion of right chest. Mitral configuration of heart also noted."

On May 6, about three weeks after admission, the patient suddenly vomited about 500 cc. of bright red blood in the morning, and about 500 cc. of blood again in the after-

noon. The following day an estimated 500 cc. of dark red blood was again vomited. The R. B. C. at this time was 1,600,000, with 24% hemoglobin. She was given one whole blood transfusion, but difficulty in obtaining donors made other transfusions at this time impossible. During the following days she was treated with fluids and a soft diet and she slowly began to regain her strength.

A quantitative Kahn taken at this time revealed 4,096 Kahn units. Three weeks later another quantitative Kahn revealed 16,396 Kahn units. On the basis of the high Kahn titer, treatment with potassium iodide was begun, following which she was given small increasing daily doses of thiobismol (soluble bismuth).

At this time the total protein was 7.6, with 3.5 albumin, 3.09 globulin. A/G ratio 1.1/1. A bromsulfalein test revealed 40% of the dye remaining in the serum after 45 minutes.

A gall-bladder series performed at this time reported "after two doses of the dye no shadow resembling the gall-bladder could be identified. No opaque calculi were noted in the gall-bladder area. Impression: Non-functioning gall-bladder."

During the remainder of this hospital stay the patient continued to improve. An x-ray film of her chest after the ascites had subsided showed disappearance of the shadow at the right lung base. The cephalin flocculation test varied between 1+ and 4+. The quantitative Kahn at the time of discharge, 4,096 units present.

Second Admission: September 13, 1947. She was admitted, complaining of having vomited blood the day prior to admission. She stated that she had vomited from 3 to 4 pints of blood. She had been nauseated and felt faint since that time. Also, she had had one tarry stool.

Physical examination revealed that she was in shock. Her skin was pale, cold and clammy. Temperature 97° F. Pulse 132/min. B. P. 50/30.

Head, Neck, Thorax: Non-contributory.

Abdomen: Firm, slightly tender liver was palpated 7 cm. below the costal margin.

Abdomen slightly tender throughout. Peristalsis active.

The remainder of the examination was limited, due to the condition of the patient. She was treated with 1000 cc. of whole blood

and with plasma, following which her blood pressure rose to 100/50, with a pulse rate of 100/minute. The following morning she again vomited 900 cc. of bright red blood, and again went into shock. Plasma was again started, but she went rapidly downhill and expired shortly thereafter, on September 14, 1947, the day after admission.

CLINICAL DISCUSSION

Dr. J. B. McLester: We have a 62-year-old colored woman who came into the hospital and died within 24 hours, apparently from hemorrhage from the upper intestinal tract. On this admission very little information was gained on which a detailed diagnosis can be made and we must depend on the observations made on her previous admission for the same complaint four months earlier. At that time the salient features of the record were as follows:

History:

Poor health with digestive symptoms for 10 years

Symptoms worse for 3 or 4 months

Hematemesis for 3 or 4 days

"Pink urine" on occasions during present illness

Examinations:

Enlarged irregular palpable liver

Rapidly developing ascites

Anemia

Albumin and RBC in urine

Normal total plasma protein with 1/2.3 A-G ratio

4 + cephalin flocculation

Bromsulfalein retention

Kahn positive in very high titre

Variable x-ray findings at right lung base

X-ray evidence of calcification in aorta

GI x-ray showed only diverticula of colon

The patient presents several problems but the diagnosis narrows down to one major question. Quite obviously she bled to death. What was the source of this blood and why? A number of the findings point to disease of the liver and others tend to rule out primary disease of the stomach as a source of the blood so that our problem is chiefly to decide what disease of the liver led to portal obstruction and collateral varicose esophageal veins from which repeated hemorrhage caused her death. Are there any suggestions?

Student: Cirrhosis.

Student Bessie Carson: Adenocarcinoma?

Student Carl Screws: Syphilis of liver?

Dr. McLester: Cirrhosis of the liver does seem most probable but we must avoid diagnosing syphilis as an etiologic agent just because the disease is present. By the laws of chance, 40% of our colored patients, regardless of other disease, will have syphilis when this is the prevalence of the disease among Negroes in this county. Dr. Noojin, with this high a Kahn titre (4096 to 16,396 units), is it possible that the syphilis here is an incidental finding?

Dr. Ray O. Noojin: We have had but two Kahn tests with this high a titre and both patients have had liver disease. In the presence of syphilitic liver disease, we have a definite therapeutic problem. The gumma responds favorably to rapid treatment if it does not involve a vital spot. However, with rapid treatment of generalized syphilis of the liver one is very apt to get progression of portal or biliary obstruction from the rapidly formed scar tissue. These must, therefore, be treated slowly. It is impossible consistently to differentiate clinically between the two. A palpable nodule or mass on the liver may be a gumma or it may be a lobe of the hepar lobatum. To be safe, we treated her conservatively and began with iodides and later cautiously gave thiobismol (soluble bismuth) in small doses with gradual increase. She apparently improved on this regimen and left the hospital in fair condition.

Dr. McLester: As to the question of carcinoma, there is no evidence of a primary tumor other than in the liver unless one of the diverticula of the colon represents a necrotic area in a carcinoma. Neither diverticulum presents this appearance. Dr. Baker has shown us a number of primary carcinomas of the liver but if this were the diagnosis here, we would have to explain the ten-year history on some other basis. I agree that we must consider carcinoma but I think it unlikely in this case. In view of what Dr. Noojin has said and in view of the fact that such a high Kahn titre must represent an active syphilitic lesion, I believe that she had syphilitic cirrhosis of the liver.

Student Baird: What about carcinoma of the fundus of the stomach?

Dr. McLester: If we make this diagnosis, we must assume the roentgenologists missed it, which is unlikely. Also, I doubt if there would have been as much plasma protein change, or if so, she should not have improved in this regard on treatment. I doubt if she had a carcinoma of any part of the stomach.

Dr. Philip Hitchcock: Could this have been a syphilitic lesion of the stomach of some kind?

Dr. McLester: The only evidence of disease of the stomach is the vomited blood. The GI series was negative. In the face of this and the evidence of liver disease that might well explain the whole picture, I cannot make such a diagnosis.

Dr. Burleson: We probably should have done a Congo-red test to see if she had amyloidosis.

Dr. McLester: Amyloidosis usually occurs in the presence of chronic purulent infection of some sort which was not present here. Also, the amyloid liver is large and smooth. I doubt if she had amyloidosis.

If one is to diagnosis these cases accurately, he must explain all positive findings. I am interested in the findings in the lungs. There was an essentially normal chest x-ray at first. Later, while she had ascites, there were positive lung findings. These disappeared with the ascites as the A-G ratio approached normal under treatment. I believe the lung findings in the x-ray were due to edema or pleural effusion based on her low plasma albumin level, a part of the liver disease, which probably also aided the portal obstruction in causing the ascites. I believe Dr. Baker will show us negligible lung pathology, if any.

I was also interested in the x-ray report of displacement of the intestines by the abdominal mass and the history of pink urine. There was blood and albumin in the urine on examination. I have been unable to visualize a kidney lesion that would do all of this as well as invade the liver and cause the presenting symptoms. Somewhat fearfully, I make no diagnosis here but will not be completely surprised if Dr. Baker shows us some urinary tract pathology.

There are always incidental findings. The calcified aortic plaque noted in the x-ray is such in this case. It is entirely similar to that seen quite often in older patients as a

part of their senile arteriosclerosis. I see no other indication of incidental findings. Secondary findings will include, of course, the anemia of blood loss and the esophageal varices. We make the clinical diagnosis as follows:

CLINICAL DIAGNOSIS

Syphilitic cirrhosis of liver
Esophageal varices
Anemia
Diverticula of the colon
Arteriosclerosis
Possible urinary tract disease

PATHOLOGICAL DISCUSSION

Dr. Baker: At autopsy the body was that of a small, aged colored woman. There was minimal edema of the legs but no fluid in the abdominal cavity.

The liver weighed 850 grams, about two-thirds as much as a normal liver. It extended well below the costal margin. The right lobe of the liver had the appearance of cirrhosis with fine scarring but the nodules were larger than in the average case of diffuse nodular cirrhosis. The left lobe of the liver was extraordinarily atrophic. The gall-bladder was displaced by adhesions. Multiple gummata occurred in the hilar portion of the liver, forming a mass as large as a couple of turkey eggs. (Fig. 1.) The spleen was about twice as heavy as normal, because of the portal obstruction. The lung had marked adhesions at the base and in the interlobar fissure. No pleural fluid was

present. The lungs appeared about normal. There was syphilitic wrinkling in the arch of the aorta. The kidneys did not appear abnormal.

In the intestinal tract there was evidence of the massive fatal hemorrhage. The stomach contained 1½ liters of blood, partially liquid and partially clotted and there was altered blood in the intestinal tract. The terminal portion of the esophagus showed a number of varicose veins just beneath the mucosa. The hemorrhage certainly must have come from these dilated veins but the actual point of rupture was not demonstrable. There seems no doubt, however, but what these varices represented the source of hemorrhage.

Microscopically the sections tended to corroborate the gross findings. A section of gumma shows the complete necrosis of tissue. (Fig. 2.) Sections of the right lobe of the liver showed scarring and hypertrophic nodules. The left lobe was composed of framework of the liver, the liver cells having been completely destroyed and removed. Sections of the kidneys showed no disease. The urinary bladder appeared normal also. I wonder, therefore, whether the finding of red blood cells in the urine had any significance. If the urine specimen was not obtained by catheterization it is possible that red blood cells from the rectum may have got into the urine. Sections of brain showed no syphilis of the meninges or parenchymal tissue.



Fig. 1. Horizontal section through liver, viewed from above (cephalad). The arrow indicates the irregular gummata. The cirrhotic right lobe is to the right and the atrophic left lobe extends to the left.



Fig. 2. Gummatous necrosis. Round-cell infiltration of fibrous capsule above and to left.

ANATOMICAL DIAGNOSIS

Syphilis
Gummata of liver

Cirrhosis of liver
Esophageal varices
Fatal G. I. hemorrhage
Splenic enlargement
Syphilitic aortitis
Hydrosalpinx
Scarring of heart

The pathologic diagnosis of gummata is reasonably secure. We were unable to demonstrate acid-fast organisms of tuberculosis in the lesion of the liver and spirochetes could not be demonstrated. Histologically the picture was more that of gumma than of tubercle. In the absence of tuberculosis elsewhere in the body and in the presence of a positive Kahn test, the gummatous nature seems established.

The origin of the cirrhosis is worthy of consideration. First it should be said that the hepatic changes are not those of hepar lobatum with deep creases of the liver and gross scarring of the liver where gummata have been. In the presence of gummata, however, one would be strongly in favor of a syphilitic origin of the cirrhosis. At the same time it must be said that it would be impossible to differentiate the cirrhosis in this case from the usual case of diffuse nodular cirrhosis of the liver, though the nodules do run rather large here. The complete atrophy of the left lobe may throw light on the nature of the cirrhosis. I should like to know whether the patient had ever had arsphenamine treatment, for in cases of arsphenamine damage to the liver the left lobe suffers more severely than the right lobe while this greater damage of the liver is not particularly characteristic of cirrhosis. On the other hand the atrophy of the left lobe might conceivably be explained on the basis of interference with blood supply by the gummata which do occur in a strategic place at the hilus of the liver.

The cause of death was massive hemorrhage into the digestive tract as Dr. McLester has said. There was no lobular pneumonia.

This case of cirrhosis of the liver is one in which the tendency to bleed was greater than the tendency to form ascites and subcutaneous edema. There is much variation from case to case in this respect.

Is there any way in which the gummata might have been diagnosed antemortem?

Dr. Robert W. Mowry: Intravenous injections of thorotrast might have caused the gummata to stand out in x-ray because the gummata have no blood supply and cannot absorb the thorotrast as would the Kupfer cells of the liver.

Dr. Noojin: We have suggested this method of diagnosis in several cases but the roentgenologists tend to be afraid of this method, feeling that it may damage the liver at some future date.

Dr. McLester: I, too, am hesitant to use the radio-active thorotrast as a diagnostic measure.

Dr. Baker, does aortic syphilis calcify? The calcified plaque seen in the x-ray is entirely similar to that seen in many older patients without syphilis but with the more common senile arteriosclerosis. You have told us only of syphilis of the aorta.

Dr. Baker: The syphilitic aortitis was accompanied by arteriosclerosis, and the calcified plaques are to be thought of as part of the arteriosclerosis. Syphilis of this vessel seems to accentuate the degree of sclerosis. As you know, arteriosclerosis is usually most severe at the bifurcation of the aorta. In this case, the sclerosis at the bifurcation is mild while that in the arch is severe. It is in the arch where the syphilitic wrinkling is seen. Therefore, Dr. McLester, I would say that syphilitic aortitis calcifies only indirectly, the mechanism being accentuation of senile arteriosclerosis.

Psychiatry—The average patient on coming to the physician brings a desire to get well. This in the person who is well adjusted is obvious. The physician utilizes this in a rational manner and in most instances pays little attention to the personality factors in the patient. The physician or therapist assumes that the patient operates rationally and is able not only to talk sense but to behave in a realistic and purposeful manner. In most instances this is true and the assumption is a safe one. However, the patient may bring other action patterns to this situation which jar the smoothness of the relationship. He may bring a dislike of physicians or have ideas that he should be able to escape physicians and medicines. Seeing a physician may represent a defeat of the first magnitude to a person who has been self sufficient. More frequently, seeing the physician releases strong tendencies for dependency. Many patients describe a reasonable attitude toward the physician, and yet behave as though he were a modern magician. They expect him to know all, to be able to cure all and to have infinite wisdom, patience and understanding.—*Watkins and Finesinger, J. A. M. A., Dec. 20, '47.*

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

COMPULSORY BLOOD-TESTS FOR FUTURE BRIDES AND GROOMS

Syphilis is one of the most cruel, as well as one of the most crippling, diseases known to medical science. It affects the bodies and minds of those who acquire it innocently or by violations of society's moral code. It brings insanity. It induces stillbirth and causes suffering to young babies who acquire it in complete innocence from their mothers before birth.

It goes without saying that the State Department of Health, County Health Departments and physicians in all parts of the state have been fully alive to the seriousness of this problem and eager to do what they could to remedy it. As a result of their efforts, a number of progressive measures have been passed by the Legislature for the curbing of this disease. Thanks to them, Alabama is now regarded as perhaps the most progressive state in the Union, and a model for other countries, in this important field.

The most recent forward step in the way of syphilis control legislation taken by this state was the passage by the 1947 Legislature and approval by the Governor of a measure known as House Bill 151. Virtually a 1947 counterpart of a number of bills considered by earlier legislatures but failing of passage for one reason and another, the new measure provides for the compulsory blood-testing for syphilis of every applicant for a license to be married in this state. It differs importantly from previous laws governing the issuance of Alabama marriage licenses in two respects: (1) It extends the requirement for a certificate of freedom from syphilis in communicable form from the prospective bridegroom alone to both contracting parties. (2) In addition to the physician's certificate stating that he considers an applicant free from syphilis in a communicable form, which certificate was required under former legislation, the new measure requires a report from a properly

qualified laboratory showing the results of a laboratory blood test for this disease. (This report is made to the examining physician, not to the bride or groom, and is confidential.)

As approximately 112,000 Alabamians are now being married every year, and all of them have numerous friends and relatives, the new law affects, and will affect, a considerable proportion of the state's total population. It is therefore deserving of consideration in some detail.

Like most new laws, H. 151 is in the nature of an amendment to an old one, specifically Section 95 of Title 22 of the Code of 1940, which has to do with requirements for obtaining marriage licenses. "Except as herein provided," the new measure declares, "each applicant for a marriage license shall file with the judge of probate a certificate from a legally licensed physician setting forth that the applicant has been examined for venereal disease and that in the opinion of the examining physician the person is either not infected with syphilis; or, if infected with syphilis, is not in a stage of that disease which is communicable. Such examination on the part of the physician shall include a physical examination and an approved laboratory test."

The law became effective on January 2, 1948. It requires that the just-mentioned physician's certificate must be accompanied by a second certificate signed by the person in charge of an approved laboratory or some other person legally qualified to sign laboratory reports. This second certificate states that an antenuptial blood specimen sent in by a certain physician in behalf of a certain prospective bride or bridegroom has been examined and gives the date the examination was completed. It does not indicate the outcome of the test, as that is revealed in the confidential laboratory report which goes directly to the physician. For the convenience of all concerned, the laboratory certificate that the blood specimen has been examined (but giving no indication of the result) is included on the sheet containing the certificate from the physician stating

that, after examining the prospective bride or bridegroom himself and seeing the confidential report of the laboratory blood test, he considers that person to be free from syphilis in a contagious form.

The laboratory blood test may be performed by the Central Laboratory of the State Department of Health, by any of the eight branch public health laboratories at Birmingham, Mobile, Anniston, Decatur, Tuscaloosa, Selma, Dothan and Huntsville, or by a private laboratory which has met the standards set by the State Health Department's Bureau of Laboratories. All laboratory tests must be made within 30 days prior to the time the marriage licenses are issued.

Here, in partial repetition, is the procedure, or rather the series of procedures, which will occur when, say, Mr. Montgomery and Miss Birmingham decide to become husband and wife:

The prospective bridegroom, in his home city, and the prospective bride, in hers, go to their family physicians or, under exceptional circumstances, to their County Health Officers, who give them thorough physical examinations and take blood samples. As the procedures from then on are identical for the two, we will leave the bride-elect and follow the steps that must be taken by and in behalf of her future husband before the happy event can be consummated.

The physician carefully places the blood sample in a small laboratory bottle made especially for this purpose, fills out the usual form sent with laboratory specimens and also a special form giving his name and address, the prospective bridegroom's name and address and the date on which the specimen was taken. These two forms are then wrapped around the small bottle containing the specimen, the three are then placed in a substantially constructed laboratory shipping container and finally the package is rushed by the quickest means possible to the laboratory.

As soon as the busy laboratory technicians can complete the required test, a confidential report of the outcome (positive or negative) is made to the physician who sent in the blood sample. At the same time that physician also receives from the laboratory what is known as the Certificate Form for Antenuptial Medical Examination. At the

top is a certificate stating that the blood sample taken by Dr. So-and-So of such and such an address has been subjected to one of the standard tests for syphilis (which must be named) and that the test was completed on a certain date. The lower part of that form, to be filled in and signed by the physician, reads as follows: "Pursuant to the Code of Alabama 1940, as amended in 1947, I do hereby certify that I have given a physical examination, including a standard blood test for syphilis, as required by the Alabama Department of Health for the discovery of syphilis, to John Montgomery on January 5, 1949 (or whenever the examination was given) and that, in my opinion, said applicant is not infected with syphilis or, if infected, is not in a stage of that disease whereby it may be communicable. I do further certify that I am a physician duly licensed to practice in the state of Alabama." (If our hypothetical Mr. Montgomery should be a resident of some other state, the physician of course would state that he was duly licensed to practice in that state, rather than in Alabama.)

I wish to call your attention to two points that may have escaped you as you read the foregoing statement: (1) The Laboratory Certificate does not give the result of the laboratory blood test. (That, remember, is given on the confidential report which the physician receives from the laboratory.) (2) The Physician's Certificate does not state that the applicant for a marriage license does not have syphilis. It states only that he does not have it in a communicable form. As already pointed out, only the laboratory personnel and the physician have the right to know whether an applicant has or does not have the disease. And, I repeat, it is not necessary for the applicant to be free of syphilis for him to obtain the all-important Physician's Certificate. He simply must not have it in a communicable form. The purpose of the law is to prevent those having the disease from transmitting it to others, and that purpose is effectively served by preventing persons with infectious-stage syphilis from marrying.

When Mr. Montgomery and Miss Birmingham receive their two-part Certificate Forms for Antenuptial Medical Examinations, they take them to the marriage license clerk. After he issues the license, he attaches the Certificate Forms of both con-

tracting parties to it and hands it to them for the customary fee. They then are legally authorized to be married anywhere in the state within the normal time limits allowed in such licenses. When the ceremony is performed, the officiating minister or justice of the peace signs the marriage license, indicating that the marriage has actually occurred, and then the license, with the two certificates still attached, is sent to the judge of probate of the county in which the marriage occurred. He makes an official record of the marriage in the book he keeps for this purpose and then sends the marriage license and attached certificate forms to the Bureau of Vital Statistics of the State Department of Health, in Montgomery. There the essential information the marriage license contains is transferred to the Bureau's marriage records and the documents themselves are preserved.

The state's public health laboratories and the private laboratories approved for this service will supply physicians with the glass containers for the blood samples and the special forms which they must fill out. The laboratories themselves of course will be supplied with blank Certificate Forms for Antenuptial Medical Examinations.

The law allows some discretion to judges of probate in the matter of granting marriage licenses. Whenever one of them is convinced of the existence of what the law calls "an emergency," he is permitted to issue a license without receiving the doctor's certificate and laboratory certificate normally required. This discretion may be exercised (1) when the prospective bride makes an affidavit, supported by medical testimony, that she is pregnant; (2) when death appears imminent for either of the contracting parties; and (3) when other conditions to be prescribed by the State Board of Health have arisen.

The new legislation is a product of careful study by Alabama's public health authorities of similar legislation now in effect in other states and of a serious effort to give this state a law which will best serve its particular needs in the field of venereal disease control. As time goes on, it is entirely possible that minor changes will be made in response to the need for such changes as revealed by the law's actual operation. However, such changes as may be made are ex-

pected to be only minor in nature, having little effect upon the measure's major provisions and purposes. The 1947 Legislature is to be congratulated upon taking such a progressive forward step in the curbing and eventual mastery of one of mankind's historic diseases.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

November 1947

Examinations for diphtheria bacilli and Vincent's	704
Agglutination tests (typhoid, Brill's and undulant fever)	718
Typhoid cultures (blood, feces and urine)	399
Examinations for malaria	401
Examinations for intestinal parasites	2,134
Serologic tests for syphilis (blood and spinal fluid)	21,492
Darkfield examinations	27
Examinations for gonococci	2,584
Examinations for tubercle bacilli	2,025
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	78
Water examinations	1,203
Milk and dairy products examinations	2,698
Miscellaneous	297
Total	34,761

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1947

	Sept.	Oct.	E. E.* Oct.
Typhoid	7	3	16
Typhus	13	13	46
Malaria	200	181	781
Smallpox	0	0	0
Measles	29	9	13
Scarlet fever	15	50	122
Whooping cough	111	61	67
Diphtheria	30	58	146
Influenza	35	74	129
Mumps	19	8	27
Poliomyelitis	8	7	10
Encephalitis	1	1	1
Chickenpox	0	10	16
Tetanus	3	3	3
Tuberculosis	193	227	222
Pellagra	2	4	5
Meningitis	4	6	10
Pneumonia	57	77	118
Syphilis	2619	3102	1507
Chancroid	22	39	15
Gonorrhea	670	859	492
Tularemia	0	0	0
Undulant fever	10	6	7
Amebic dysentery	1	2	0
Cancer	256	304	0
Rabies—Human cases	0	0	0
Positive animal heads	28	37	0

— As reported by physicians and including deaths not reported as cases.

*E.E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND DEATHS FROM CERTAIN IMPORTANT CAUSES FOR AUGUST 1947, AND COMPARATIVE RATES FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During August 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	7096	**	**	27.8	29.1	23.7
Stillbirths	231	**	**	31.5	28.5	27.6
Deaths, exclusive of stillbirths	2050	1203	847	8.0	7.4	8.0
Infant deaths:						
Under one year	233	134	99	32.8	33.6	44.1
Under one month	181	106	75	25.5	26.1	27.0
Typhoid and paratyphoid 1, 2	2	2	0	0.8	0.4	0.4
Epidemic cerebrospinal meningitis 6	1	0	1	0.4	0.8	1.2
Whooping cough 9	9	2	7	3.4	1.6	4.4
Diphtheria 10	1	1	0	0.4	0.8	2.0
Tuberculosis, all forms 13-22	87	35	52	34.1	34.9	34.5
Malaria 23	5	1	4	2.0	0.8	0.8
Syphilis 30	18	4	14	7.1	10.6	7.9
Influenza 33	6	4	2	2.4	2.7	2.4
Measles 35	0	0	0		0.8	
Poliomyelitis 36	0	0	0		0.8	2.4
Encephalitis 37	1	1	0	0.4	0.4	
Typhus fever 39	2	2	0	0.8	0.4	2.8
Cancer, all forms 45-55	205	140	65	80.4	75.3	76.4
Diabetes mellitus 61	36	23	13	14.1	9.0	10.3
Pellagra 69	6	4	2	2.4	3.1	3.6
Alcoholism 77	7	6	1	2.7	1.2	1.2
Intracranial lesions 83	195	100	95	76.5	64.3	76.1
Diseases of the heart 90-95	487	300	187	191.0	154.9	165.6
Diseases of the arteries 96-99	26	18	8	10.2	10.2	11.5
Bronchitis 106	5	5	0	2.0		2.0
Pneumonia, all forms 107-109	58	32	26	22.7	23.5	23.4
Diarrhea and enteritis (under 2 years) 119	15	9	6	5.9	3.9	16.6
Diarrhea and enteritis (2 and over) 120	8	5	3	3.1	0.8	2.8
Appendicitis 121	10	5	5	3.9	3.9	5.1
Hernia and intestinal obstruction 122	20	12	8	7.8	7.1	6.3
Cirrhosis of the liver 124	6	4	2	2.4	4.3	2.0
Nephritis, all forms 130-132	128	64	64	50.2	49.0	55.8
Diseases of puerperal state 140-150	18	8	10	24.6	31.4	47.1
Puerperal septicemia 140, 142a, 147	6	3	3	8.2	14.4	14.6
Suicide 163-164	16	13	3	6.3	9.4	4.8
Homicide 165-168	45	16	29	17.6	14.9	13.5
Accidents, all types 169-195	171	128	43	67.1	61.2	61.4
Motor vehicle accidents 170	62	52	10	24.3	22.0	21.8
All other known causes	335	219	116	131.4	125.9	144.2
Ill-defined and unknown causes 199-200	121	39	82	47.5	55.7	47.9

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the August report of the years specified.

**Not available.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

DISEASES TRANSMISSIBLE TO MAN BY FOOD AND FOOD UTENSILS

Contributed by

L. W. Grogan

Principal Sanitarian

It has been estimated by the U. S. Department of Commerce that the total sales for food establishments in the United States for the year 1929 were \$175,000,000 and for the month of October 1942 alone, \$592,000,000.

Since the time that this estimate was made, the sales by food establishments serving the public have grown to a considerably higher figure in dollars, as well as in number of persons eating in public places. It can be said safely that every person in the United States is served at least once a day from a public food establishment in some manner.

During the year 1944 there were reported in the United States 288 food-borne epidemics totaling 14,427 cases. These figures represent only a small per cent of the actual cases. In fact, it is estimated that these figures are only about 5 per cent of the actual cases that occurred. The majority of the cases of food-borne diseases are from social or public gatherings where the same type foods are served to a large group of people. Epidemics attract attention and investigations are made in order to determine the item or items of food that caused the illness. On the other hand, numbers of people are made ill from eating in public food establishments every day that do not contact or seek medical aid. In all cases persons that become ill from food are not reported to the proper agencies and consequently investigations are not made to determine the causative agent.

Food poisoning may result from a diverse group of inciting agents. There is a tendency to place food poisoning under a blanket term, ptomaine poisoning, thus disguising the causative agent. The term ptomaine poisoning is meaningless and unscientific as there is neither a specific entity nor a group of substances which can be called ptomaine. It should also be borne in mind that putrefaction should not be associated with food poisoning. One of the most putrefactive of

the bacteria was used during the first World War to treat suppurative wounds; and a wholesome food containing putrefactive bacteria is Limburger cheese.

If a more complete and accurate record were obtained on the number of cases occurring yearly from this source of infection, the general public would no doubt be of great assistance to the Sanitarian in the promotion and enforcement of a food control program by observing infractions of sanitation and calling them to the operator's attention.

Some of the most common food-borne diseases occurring in epidemic form are not usually spread by food utensils but rather by infected foods themselves. The following table lists some of these diseases, together with the source of infection.

Disease	Source of Infection
Staphylococcus.....	Infected person, milk, meat
Enteritis.....	Infected person usually
Gastroenteritis.....	Infected person usually
Dysentery, bacillary (amebic).....	Infected person or milk
Salmonella (para- typhoid).....	Infected person, milk, meat
Botulism.....	Infected food (usually canned)
Chemical food poisoning.....	Infected food
Trichinosis.....	Infected animal
Typhoid fever.....	Infected or carrier person

Of the above named diseases and sources of infection, a number of people may become ill with these within a few hours of each other, thus indicating a common source of their infection. This is known as an epidemic. Questioning the sick persons as to where and what they ate in the last 24 hours before they became sick usually reveals that they have all eaten at the same place and the same foods or have eaten foods prepared at the same place. Often, by eliminating foods not eaten by part of them, it can be determined that a single item of food caused the infection.

Of the diseases that are transmissible to man by food utensils, we all know that it is dangerous to be around a person with active lung tuberculosis who is coughing, since he coughs the bacteria or organisms that cause it out of his lungs and may spray them into the air in tiny droplets of sputum. Well persons may inhale these droplets and become infected. The droplets may also settle on foods and utensils which are put in the

mouths of well persons, thus the use of this type utensil, unless given proper bactericidal treatment, may result in the infection of others.

However, the infection spread by dishes and other food utensils rarely or practically ever occurs in epidemic form, or in large numbers occurring in a short time. Because of this, it is rather difficult to trace them definitely to infection from utensils, but the potentialities of such are ever present.

This brings to mind some of the food-borne infections usually not in epidemic form caused by food and food utensils. They may be listed as follows:

Disease	Source of Infection
Influenza & common cold.....	Utensil or droplet
Mumps.....	Utensil or droplet
Tuberculosis.....	Utensil, droplet, milk or meat
Vincent's angina.....	Utensil
Measles.....	Utensil or droplet
Scarlet fever.....	Utensil, droplet, milk
Diphtheria.....	Utensil, droplet
Tularemia or rabbit fever.....	Infected meat
Brucellosis or undulant fever.....	Infected milk or meat

In conclusion we can summarize in a brief outline the above statements as to how foods and food utensils become infected: (a) before purchase, particularly meats, milk and seafoods; (b) infected or carrier persons by hands, coughing; (c) contaminated utensils by hands, lips, coughing, rats, flies, dust, roaches and water, (d) after preparation by warm storage, rats, flies, utensils, hands, and coughing. All regulations governing the manufacture, preparation, display and service of foods, confections and beverages intended for human consumption were not drawn from an esthetic viewpoint but with a very definite public health reason in mind for their adoption and enforcement for the protection of the public health from disease which may be transmitted and spread through foods and beverages.

1948 MEETING
ADMIRAL SEMMES HOTEL
MOBILE
APRIL 15, 16, 17

AMERICAN MEDICAL ASSOCIATION NEWS

REPORT GOOD RESULTS IN PEPTIC ULCER BY CUTTING VAGUS NERVES

**SURGEON REPORTS 37 OUT OF 40 OPERATIONS
WERE SUCCESSFUL; SAYS TRANSABDOMINAL
OPERATION HAS "DISTINCT ADVANTAGES"**

Unusually encouraging results in the treatment of peptic ulcer by transabdominal cutting of the vagus or gastric nerve are reported by Philip Thorek, M. D., Chicago, from the Departments of Surgery of the University of Illinois, the Cook County Graduate School of Medicine, the Cook County Hospital and the American Hospital, in the December 27 issue of *The Journal of the American Medical Association*.

Peptic ulcer, which is tenth among causes of death from chronic illness in the United States, is a condition in which a craterlike area of tissue destruction appears either in the gastric pouch (stomach ulcers) or, much more frequently, in the first part of the small intestine leading into the stomach (duodenal ulcers).

Treatment usually consists of a "soft" diet of frequent small meals, plus alkalis to counteract the hyperacid condition, and sometimes mild sedatives.

There is a decided tendency toward recurrence of symptoms even after the original ulcer has healed, however—especially if there is emotional strain or worry. In cases which do not respond to medical treatment some doctors therefore advocate cutting the vagus in order to reduce gastric overactivity and excessive secretion and keep the stomach from sharing the troubles of the brain. In order to correct these conditions, every one of the fibers of the vagus, a cranial nerve with two branches which run down alongside the gullet to fan out over the exterior of the stomach, must be severed. Since it is easy to overlook some of the fibers the operation has not always been successful.

Dr. Thorek reports in some detail on 25 cases in which he performed this operation. There were three deaths, but none could be directly attributed to the operative procedure. "In my remaining 22 cases," he says, "the results have been most encouraging. It is indeed gratifying to note the immediate

relief obtained after vagotomy and the ability of the patient again to enjoy a full meal and lead a normal life." In addition, he reports 15 operations performed since submission of his article—with equally good results and no deaths.

"What the future holds for the functions of the liver, pancreas, kidney and intestinal tract following vagus nerve section cannot be stated at this time," he concludes. "Although these pros and cons cannot be definitely settled, the question should be approached and followed with an unbiased attitude. Whether or not the vagus nerves will regenerate can be proved only by careful follow-ups of these patients.

"The operation seems indicated in duodenal and stomach ulcers which do not respond to medical treatment. Gastric ulcers with their probable tendency toward malignant degeneration should be resected.

"The transabdominal operation has distinct advantages . . .

"Vagus nerve section may one day have a definite place in the therapy of peptic ulcers; however, the period of observation has been too short for final deductions."

CONGRESS ON MEDICAL EDUCATION AND LICENSURE TO DISCUSS PROBLEMS

Some of the most important problems facing medical schools at this time will be discussed at the 44th annual Congress on Medical Education and Licensure, to be held under the auspices of the Council on Medical Education and Hospitals and the Federation of State Medical Boards at the Palmer House, Chicago, February 9 and 10, 1948.

Papers on the financial support of medical education will provide a highly significant discussion. The addition to the undergraduate curriculum of courses on the clinical effects of nuclear fission and on physical medicine and rehabilitation will be discussed by authorities in these fields. The recent intense interest in the subject of general medicine makes the review of programs for preparing students for general practice of particular significance.

In addition to the formal program of the congress, several national groups concerned

with medical education, research, hospitals and licensure will hold special meetings. These include the Executive Council of the Association of American Medical Colleges, the Advisory Board for Medical Specialties, the National Board of Medical Examiners, the National Society for Medical Research and others.

FALSE IDEAS ABOUT MENTAL ILLNESS WASTE MILLIONS OF TAX DOLLARS

False ideas about mental illness help keep patients in mental hospitals who ought to be cured or discharged, increase the amount of mental illness, and waste millions of tax dollars, a writer charges in the current issue of *Hygeia*, health magazine of the American Medical Association.

The writer is Stephen Thiermann, former legal associate and executive assistant in the National Mental Health Foundation and currently executive secretary of the Northern California Branch, American Friends Service Committee.

Mr. Thiermann points out the large role which the superstition "it can't happen to me" plays in public indifference to mental illness. "In 1945, the latest year for which figures are available, 14 times as many persons were suffering from psychiatric disorders as from tuberculosis, 83 times as many as from polio," he writes. "We contributed to voluntary health agencies \$22 for each victim of tuberculosis, \$94 for each polio patient, and half a cent for the mentally disordered."

The equally false conviction that "mental illness is a disgrace," he says, makes people hesitate to consult mental health clinics before their illnesses become severe. "This boycott of clinics, of course, increases mental illness, puts more patients in hospitals and takes more tax dollars out of our pockets. Each commitment prevented saves the state \$5,000 to \$7,000, estimated cost of an average period of hospitalization."

The idea that insanity is incurable costs us even more, Mr. Thiermann observes. Although modern treatment in psychiatry brings more recoveries than in any other branch of medical science except obstetrics, expenditures for mental hospitals are so inadequate that many of them are not modern treatment centers, but mere custodial units.

"One authority has estimated that public neglect of our mental hospitals means that 20 per cent of all persons admitted to a state mental institution are doomed to life imprisonment, when with adequate care and treatment they could be saved," he writes.

"Pennsylvania needs 50 mental health clinics and has the equivalent of four full-time clinics. Fifteen states have no clinics.

"In 1946 in U. S. institutions there was a 74 per cent deficiency in psychiatrists; 78.8 per cent deficiency in graduate nurses; 91.9 per cent deficiency in clinical psychologists; 70.8 per cent deficiency in psychiatric social workers; a 22.9 per cent deficiency in attendants.

"On an average in 1946 psychiatric aides received \$500 less annually than the help maintaining the buildings."

This is false economy, Mr. Thiermann observes. In Pennsylvania electric shock treatment saved the state \$175,044 on 179 patients with involutional melancholia, while it has been estimated that the nation would save \$2,000,000 annually if all new cases of dementia praecox admitted to chronic psychiatric hospitals received intensive insulin shock treatment.

Furthermore, in 1944 it is estimated that the loss of income to families of only the first admissions to state mental hospitals was \$355,000,000.

Think of the benefit from a campaign to stop the spray of infected mouth and nose droplets! Not only would the spread of the disease be slowed but the seasonal surge of diseases like the common cold, influenza, measles, whooping cough and pneumonia would diminish. It would be possible to go to a movie without having a germ-laden spray hurled at one from behind and consequently having to suffer from the other fellow's respiratory infection. Under these conditions, dodging the tubercle bacillus, in and out of the hospital, would be possible for all of us.—

Ezra Bridge, M. D., NTA Bull., June 1947.

A turning point has now been reached in the chemotherapy of tuberculosis. Although streptomycin may not be the final answer in the treatment of this scourge of mankind—and I hope that it is not—it has opened a new path, a path of antibiotic approach to chemotherapy, an approach sought since the discovery of the bacterial nature of the disease; the control of tuberculosis may finally materialize and thus advance man one step further in his battle against disease and epidemics.—*Selman A. Wakeman, D.Sc., Ph.D., J. A. M. A., Oct. 25, 1947.*

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

February 1948

No. 8

THE ACUTE ABDOMEN

CHARLES N. CARRAWAY, Ph. G., M. D., F. A. C. S.

Birmingham, Alabama

Acute abdomens are ever-present conditions that confront the physician, internist, gynecologist and surgeon alike. Patients presenting symptoms of an acute abdomen should be given serious consideration, and prompt and continuous attention until a definite diagnostic conclusion has been reached. If the patient has severe abdominal pain lasting six hours, or has had to have medication for the pain, operation is usually indicated.

The examining physician must keep in mind the anatomy and physiology of the abdominal organs which may become involved in acute pathologic conditions. Certain referred pains can be explained by the migration of some of the organs contained in the abdominal cavity from the position of their primary embryonic development. During the embryonic period the diaphragm descends from the cervical region and in its descent carries with it the phrenic nerve. When the diaphragm becomes involved pathologically (an area of about three inches in diameter on both sides of the esophagus), the pain is often referred through the phrenic nerve to the clavicular and scapular regions.

In its descent from the kidney region, the cecum, carrying with it the appendix, frequently fails to descend and rotate perfectly. When the appendix becomes inflamed, the site of tenderness and muscle rigidity will be over the final location of the appendix. Only 72% of appendices are found in the region known as McBurney's point. The

testes, which also descend from the kidney region, often fail to descend through the inguinal canal into the scrotum. The canal fails to close normally in 20% of males. The spermatic nerves and vessels are carried with the testes in their descent. When the testes become pathologically involved, the pain is often referred to the kidney region and/or to the abnormal location of the testes.

The sympathetic nervous system is the watchdog of the abdomen. When pathologic changes develop in any abdominal organ, the alarm is turned in by the sympathetic nervous system which, through its connection with the somatic nervous system, announces to the brain centers that something has gone wrong in the abdomen.

The female reproductive organs in the pelvis do not have peristalsis. The sympathetic nerves that supply them do not have connection with the abdominal musculature. Therefore, a patient with pelvic inflammation does not have abdominal muscular rigidity, nor does she have pain on movement of the body, unless the inflammation has spread beyond the pelvis onto the abdominal peritoneum. Abdominal pain, muscle spasm and rigidity on movement of the body will then be in direct proportion to the amount of involvement of the abdominal peritoneum.

On examining a patient suspected of having an acute abdomen, the physician must keep uppermost in his mind the most frequent acute disease of the abdomen, but not be unmindful of infrequent conditions that occur. Often physiologic and physio-

chemical changes take place, with added toxic symptoms. In our opinion the most important factor in arriving at a correct diagnosis is a history of facts. Any other history is misleading and conducive to a wrong conclusion.

There are many factors which might prevent the obtaining of a correct history. Among some of the most common are the patient's ignorance, age and mental condition at the time of the examination. It is always several hours to several days before the surgeon sees the patient. Too often the symptoms and physical findings at the time the patient is seen have materially altered due to the progressive changes in the pathology. This makes it necessary to get a correct history of the primary onset of symptoms. To do so it is important to determine the date and hour of onset, what the patient was doing at the time of onset, and what the reaction of the patient was to the first symptoms. This is not always easy and in some instances is impossible to obtain if the patient is in an abnormal mental state or if the present acute abdominal condition comes on as a separate entity during some other acute febrile disease.

Keeping in mind the primary pathology of different diseases of the abdominal organs and their production of symptoms as the pathology progresses, the symptoms must come in chronologic order. In arriving at a diagnosis, the first and foremost conclusion is to determine whether one is dealing with a surgical abdomen. This decision should not be delayed. A history of facts will often make a diagnosis in itself.

All acute conditions of the abdomen begin with pain as soon as the pathologic changes have advanced to that phase. The first alarm is registered by the sympathetic nervous system.

We divided our acute abdomens into groups according to the onset and character of the pain. In group one the disease comes on with pain which may be mild or severe, usually cramp-like in character, but increases in severity and is most often due to inflammation of an infectious nature. The pain in inflammatory conditions of the abdomen comes on in chronologic order and often changes in character and location.

Group two is composed of patients with sudden, severe, and often agonizing pain

which is almost always cramp-like in character. This pain lasts until there is some change in the pathology and with added symptoms as the pathology progresses and involves other structures. This group includes mechanical alterations of some foreign body in a hollow viscus or the viscus itself becomes incarcerated in an abnormal opening in the abdominal cavity. If gallstones and kidney stones should become loosened by over-distention of the involved viscera, the stones might slip out of their positions or if an incarcerated hollow viscus becomes disengaged, the patient would be relieved. On the other hand if the calculus or viscus remained impacted, one would have progressive symptoms. If the strangulation continued, one would have added symptoms of obstruction of that particular organ, and if there was sufficient interference with the circulation, gangrene would follow. In abdominal hemorrhage or thrombosis there is a sudden pain which may be severe or mild and which might produce a chemical peritonitis. If the hemorrhage is severe or the area involved by thrombosis is great, there will be shock and, as a rule, diminution of pain in proportion to the severity of the shock.

Group three consists of patients with rupture of some part of the alimentary canal. These patients have a sudden, severe, agonizing pain that is continuous and incapacitating, and have immediate added symptoms of peritonitis. In an effort to minimize the pain, the abdominal muscles become board-like. Pus cavities that rupture into the general abdominal cavity do not, as a rule, produce a sudden, severe onset of pain but the symptoms and pain increase as the peritonitis develops.

It is routine that all types of laboratory procedures and x-rays that are thought to be of any diagnostic value must be done on all patients. There is variability in laboratory and x-ray findings under certain circumstances in the same disease. In coming to a conclusion, it is best to adhere to the history and physical when the laboratory and x-ray findings do not agree with the history and physical except when such findings are pathognomonic.

The opinion and conclusions reached in this presentation are based on the study of 6355 cases with diagnoses proven by surgery,

pathologic or postmortem findings. Patients diagnosed in the Clinic and the admitting department, who did not come to surgery or postmortem examinations, are omitted.

ACUTE APPENDICITIS

Acute appendicitis, being the most frequent acute condition of the abdomen, will be discussed first. Although anyone may be stricken with appendicitis, it is primarily a disease of youth. It is a curious fact that, although appendicitis is such a common disease, the etiologic factor still remains vague and indefinite, being anything which produces an inflammatory condition in the appendix. The appendix contains much lymphoid tissue and is very susceptible to bacterial invasion. The invasion takes place in the bottom of one or more of the follicles at the junction of the mucosa and submucosa and extends through the wall of the appendix. Foreign materials, especially fecaliths, are often factors which contribute to the introduction of bacteria into the walls of the appendix. Appendicitis often follows acute infections in other parts of the body, such as tonsillitis. The colon bacillus, streptococcus and pneumococcus are among the bacteria most frequently causing septic appendicitis. The rapidity with which the destruction of the appendiceal walls takes place is generally in proportion to the virulence of the infection.

Appendicitis is the most common acute pathologic condition found in the abdomen. Careful analysis of its symptoms, particularly in the early stages, is of extreme importance. John B. Murphy, in 1909, stressed the value of the chronologic order of symptoms in acute appendicitis: first, abdominal cramp-like pain around and above the umbilicus; second, nausea or nausea and vomiting, appearing in a few minutes to several hours; and third, localized tenderness within twelve hours, accompanied by slight elevation of temperature and pulse. This cycle of symptoms takes place in from two to twelve hours in 90% of the cases. Deaver emphasized this order and worked out the causes, showing why the symptoms occur in the way they do. Babcock, in 1935, and Kalteyer, in 1937, called attention to and further stressed the chronologic order of symptoms as described by Murphy and Deaver.

Deaver, Hurst, Pollock and Davis, and McKenzie have shown that the first pain,

which is cramp-like, is produced by the contraction of the appendiceal walls. The pain is transmitted through the splanchnic nerves to the spinal cord and enters the cord through the posterior roots of the sixth through the twelfth dorsal nerves inclusive, continuing along the sensory paths of the cord to the sensory centers in the brain. Willie B. Gatch in his recent work has shown that nausea is due to the rhythmic contraction of the stomach walls; and that when vomiting takes place, there must be, in addition, contraction of the abdominal muscle.

TABLE 1
ACUTE CONDITIONS OF THE ABDOMEN
Operations From 1923 To 1947

Acute appendicitis	5473
Acute cholecystitis with and without cholelithiasis	413
Intestinal obstruction	182
Ruptured peptic ulcers	142
Ruptured ectopic pregnancy	74
Ruptured follicular cyst of ovary	35
Meckel's diverticulum	14
Acute salpingitis and chronic salpingitis with acute leak	11
Tumors with twisted pedicles	6
Acute pancreatitis	3
Mesentery thrombosis	2
Total	6355

TABLE 2
SYMPTOMS IN ACUTE APPENDICITIS

	First Symptom				
	Cramp-Like Pain in Abdomen	Pain in Right Side of Abdomen	Nausea, or Nausea and Vomiting	Tenderness	Elevated Temperature and Pulse
Acute					
One attack	86.6%	13.4%	98.1%	100%	95.8%
More than one attack	71.4%	28.6%	95.3%	100%	88.5%
Gangrenous					
One attack	93.6%	6.7%	97.4%	100%	96.4%
More than one attack	87.9%	12.1%	93.8%	100%	90.7%
Ruptured	88.9%	11.1%	98.2%	100%	100.0%
Abscessed	77.8%	22.2%	87.5%	100%	100.0%
Total number of cases 5,473.					

The all-important factor in acute abdomens is the diagnosis, and once it has been made surgery is the treatment with few exceptions; e.g., acute pancreatitis. All acute abdomens are amenable to operation if the surgery is done at the proper time. Procrastination (regardless of its reason—inability, ignorance, indecision or wishful hoping) is the most frequent cause of postoperative morbidity, sequelae and death. Appendectomies should be done as soon as the diagnosis can be made. Chemotherapy may be used in the first few hours, before

TABLE 5

TIME INTERVAL: ONSET OF FIRST SYMPTOM TO OPERATION

Postoperative Diagnosis	Number of Attacks	Duration of attacks															
		6 hrs. or less	6-10 hrs.	10-14 hrs.	14-18 hrs.	18-22 hrs.	22-28 hrs.	28-32 hrs.	32-36 hrs.	36-48 hrs.	3 days or less	Within 4 days	Within 6 days	Over 6 days	Total		
Acute																	
Attack began with cramp in abdomen	one	48	253	330	293	258	424	83	76	198	125	87	79	76	2330		
	more than one	9	69	205	169	166	96	41	35	28	34	23	28	52	955		
Attack began with pain in right side of abdomen	one	10	29	41	34	30	20	24	16	23	42	11	47	17	344		
	more than one	9	54	57	43	44	35	29	38	25	33	31	26	34	458		
Gangrenous																	
Attack began with cramp in abdomen	one	5	43	64	86	114	92	107	70	21	39	6	7	15	669		
	more than one	.....	6	18	27	5	43	20	6	26	6	7	12	3	179	
Attack began with pain in right side of abdomen	one	.....	.....	3	5	5	13	4	.....	8	10	1	.....	.....	49
	more than one	.....	.....	.....	.....	.....	3	2	.....	1	.....	5	6	.....	17
Ruptured																	
Attack began with cramp in abdomen	one	.....	.....	.....	9	14	22	12	15	29	61	45	18	10	235
	more than one	.....	.....	.....	2	4	.....	3	4	11	8	3	5	1	42
Attack began with pain in right side of abdomen	one	.....	.....	.....	.....	.....	2	1	1	4	5	6	12	3	34
	more than one	.....	.....	.....	.....	.....	.....	.....	.....	3	1	.....	.....	.....	4
Abscessed																	
Attack began with cramp in abdomen	one	.....	.....	.....	.....	.....	.....	.....	5	2	7	11	33	56	113
	more than one	.....	.....	.....	.....	.....	.....	.....	.....	2	3	.....	2	6	12
Attack began with pain in right side of abdomen	one	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	3	5	13
	more than one	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	6	12	19
																Total	5473

TABLE 6
ATTACK INCIDENCE IN ACUTE APPENDICITIS

<u>Number of Attacks</u>	<u>Acute</u>	<u>Gangrenous</u>	<u>Rupture</u>	<u>Abscess</u>	<u>Total</u>
One attack	2674	718	269	126	3787
More than one attack	1413	196	46	31	1686
Total	4087	914	315	157	5473

TABLE 7

TIME INTERVAL; ADMISSION TO OPERATION

	Postoperative Diagnosis	Number of Attachs	1 hr. or less	1-2 hrs.	2-4 hrs.	4-6 hrs.	6-12 hrs.	12-24 hrs.	24-36 hrs.	36-48 hrs.	Total
Acute											
Attack began with cramp in abdomen	one		335	1025	673	99	86	109	-----	3	2330
	more than one		113	297	254	142	64	79	5	1	955
Attack began with pain in right side of abdomen	one		98	106	73	28	17	18	2	2	344
	more than one		32	185	179	26	33	-----	2	1	458
										Total	4087
Gangrenous											
Attack began with cramp in abdomen	one		102	374	184	6	-----	2	1	-----	669
	more than one		21	112	36	-----	2	8	-----	-----	179
Attack began with pain in right side of abdomen	one		1	25	12	7	1	-----	3	-----	49
	more than one		2	11	1	2	-----	1	-----	-----	17
										Total	914
Ruptured											
Attack began with cramp in abdomen	one		43	97	58	24	8	3	-----	-----	235
	more than one		7	33	-----	-----	1	-----	-----	-----	41
Attack began with pain in right side of abdomen	one		5	22	6	-----	1	-----	-----	-----	34
	more than one		-----	3	-----	1	-----	-----	-----	-----	4
										Total	314
Abscessed											
Attack began with cramp in abdomen	one		32	61	12	7	1	-----	-----	-----	113
	more than one		-----	6	2	-----	3	1	-----	-----	12
Attack began with pain in right side of abdomen	one		-----	-----	5	4	1	3	-----	-----	13
	more than one		-----	-----	1	3	9	4	2	-----	19
										Total	157
										Grand Total	5472

50,000 units of penicillin are instilled in the abdomen through a rubber tube which is placed in the operative field before the abdomen is closed. A thin rubber drain is left in those cases requiring drainage and 50,000 units of penicillin are given intramuscularly every three hours until, in our opinion, it is no longer needed.

ACUTE CHOLECYSTITIS WITH AND WITHOUT CHOLELITHIASIS

There were 413 cases of acute gallbladder disease operated on at Norwood Hospital from 1923 to 1947. Patients with acute gallbladder diseases, as a rule, do not come to surgery as early as those with acute appendicitis. In our opinion, the delay is due to the fact that gallbladder surgery is considered more serious by the physician and the patient, and this fact is probably the reason why more patients refuse surgery than do those patients with acute appendicitis. The majority do not call the surgeon until the third or fourth day unless they have continued to grow worse, and often by this time

gangrene has occurred. At least 90% of acute gallbladders are produced by obstruction from stones in either the ampulla of the gallbladder or the cystic duct. Cholecystectomy, which is the present-day operation of choice, should carry as low a mortality rate as appendectomy, if and when physicians and patients have been educated as to the importance of gallbladder disease as they have been regarding the importance of appendicitis. When it is fully realized that an early operation before serious pathologic changes develop is as important as it is in appendicitis, the end results will be equally as good.

The first symptom of cholecystitis is a sudden moderate or severe pain. This pain is intermittent at first due to the muscular contraction of the gallbladder. The pain is located in the region of the gallbladder at the costal margin and often radiates to the scapular region. There may be nausea or nausea and vomiting if the stomach is not

TABLE 8
INCIDENCE AND MORTALITY IN APPENDICITIS

	Year		Acute			Gangrenous			Ruptured or Abscessed		
	Total	Total Deaths	Num-ber	%	Deaths	Num-ber	%	Deaths	Num-ber	%	Deaths
1923	184	6	111	60.4	0	59	32.0	3	14	7.6	3
1924	188	5	130	69.2	0	43	22.8	0	15	8.0	5
1925	201	11	139	69.2	2	39	19.4	1	23	11.4	8
1926	180	3	123	68.4	0	49	27.2	2	3	4.4	1
1927	164	1	116	70.8	0	36	21.9	0	12	7.3	1
1928	204	8	129	63.3	0	57	27.9	2	18	8.8	6
1929	194	6	155	79.2	3	29	15.2	0	10	5.6	3
1930	227	5	179	79.0	0	33	14.3	0	15	6.7	5
1931	177	7	131	74.2	1	36	20.2	4	10	5.6	2
1932	127	2	96	75.9	0	21	16.2	0	10	7.9	2
1933	160	5	112	70.3	1	25	15.4	1	23	14.3	3
1934	196	1	131	67.0	0	46	23.2	0	19	9.8	1
1935	237	6	171	73.0	1	33	13.5	1	33	13.5	4
1936	255	1	183	71.8	0	55	21.5	1	17	6.7	0
1937	320	0	239	74.7	0	48	15.0	0	33	10.3	4
1938	338	1	254	75.0	0	62	18.3	0	22	6.5	1
1939	324	2	250	76.8	0	57	17.2	0	17	5.2	2
1940	396	1	298	75.8	0	69	17.4	0	29	7.3	1
1941	317	8	272	85.7	0	18	5.6	0	27	8.5	8
1942	248	4	201	80.8	0	23	9.2	0	24	9.6	4
1943	224	0	157	70.0	0	38	16.9	0	29	12.9	0
1944	201	0	159	78.5	0	16	7.9	0	25	12.4	0
1945	175	0	139	79.3	0	16	9.1	0	20	11.4	0
1946	236	1	212	89.3	0	6	2.6	0	18	7.6	1
Total	5473	84	4087		8	914		15	471		61
Av. per year	288	3.5	176.8	73.9	7.8	38	18.0	.6	19.6	8.7	2.5

TABLE 9
ACUTE CHOLECYSTITIS WITH AND
WITHOUT STONES

Study of 45 Cases From 1923 to 1946
With Best Data

Age	Frequency		No.	%
20-25 years	7	White males	12	26.6
26-30	6	White females	33	73.4
31-35	3		45	
36-40	3			
41-45	2			
46-50	8			
51-55	6			
56-60	5			
61-65	4			
66-70	1			
	45		No.	%
History of pain			45	100
History of pain radiating to back			21	46.6
History of nausea and vomiting			42	93.3
History of tenderness in right upper quadrant			45	100

empty. If the stone remains impacted in the ampulla or cystic duct, the pain becomes continuous, but different in character, and tenderness develops over the gallbladder. The temperature is usually higher than in appendicitis, being on the average 102°F. If there has been delay for any reason before the surgeon sees the patient, there might be marked liver damage, peritonitis or gangrene with perforation. There is usually a high leucocytosis with high polymorphonuclear neutrophilia. After the contents of the gallbladder become septic, the patient frequently has chills. Twelve percent of our patients on admission had gangrenous, often phlegmonous and sometimes ruptured, gallbladders. I feel that an acute gallbladder is just as amenable to early surgery as is appendicitis.

I still use the longitudinal incision but some of my staff prefer the transverse incision. It is not possible in acute cholecystitis to leave any serous coat from the gallbladder to cover the gall-bladder bed. I have found that if one grasps the gallbladder between the thumb and fingers of the right hand, with slight pressure, the acute or gangrenous gallbladder will shell out into one's hand. I have found some gallbladders already separated from the liver. Next, the cystic duct is clamped with three clamps, care being taken that the clamps do not include any part of the common duct. Then the duct is excised between the distal and middle clamps. The stump is ligated. The distal end of the gastrohepatic ligament is freed and sutured to the stump, and this is fixed in the gallbladder bed with interrupted catgut sutures. The omentum can be used to fill in and help cover the raw surfaces. This will prevent the colon and the

pylorus of the stomach from becoming adherent which they are prone to do. A drain is always used. The common duct is opened and explored if there are indications for doing so.

ACUTE INTESTINAL OBSTRUCTION

There were 182 patients with acute intestinal obstruction who underwent operation. It is well to know whether the patient has had a previous operation.

The primary symptom of intestinal obstruction is cramp-like pain which is most frequently referred to the mid-abdomen. The nearer the obstruction is to the stomach, the more severe is the onset of the symptoms. The vomiting is earlier and the toxicity is greater in high obstructions due to the early regurgitation of very toxic materials from the upper ileum, jejunum and duodenum into the stomach.

Cramping, the initial symptom, is followed by increased peristaltic waves, nausea and vomiting, without fever but with a fast pulse and often with shock. If there is any delay in relieving the obstruction, the symptoms are aggravated and there will be fecal vomiting. The patient goes into severe shock and the peristaltic waves are obliterated due to the paresis of the bowel caused by its overdistention. A thorough examination should be made for incarcerated herniae of all types. X-rays of the abdomen and chest may frequently aid or make a diagnosis of the point of the obstruction.

The following table shows the number of cases tabulated as to the cause of the obstruction.

TABLE 10
ACUTE INTESTINAL OBSTRUCTION

Patients operated on for acute intestinal obstruction	182
Due to adhesions	97
adhesions from abdominal abscess	4
adhesions from diverticulitis	17
adhesions from other causes	76
Due to hernia	42
Due to intussusception	32
Due to malignancy	6
Due to volvulus	5
Mortality percentage	41.2%

These figures represent all classes of patients. A large percentage of them were admitted in a moribund condition, some with peritonitis from rupture. All had

surgery after careful preparation and treatment for shock. No surgery, except decompression, was ever done, other than to clip a band of adhesions, until the patient's general condition justified it. I would like to relate one case, Mr. B., who was admitted in extremis with fecal vomiting of several days' duration. Glucose, in saline, and blood were given intravenously. Under pentothal oxygen anesthesia, the abdomen was opened with the intent of doing a decompression. A loop of gangrenous gut came into view and when it was picked up, it lifted up out of the abdomen without any dissection whatever. Further investigation revealed dense adhesions. A soft rubber drain was placed at the site where the gangrenous gut came off. The abdomen was closed with through and through sutures. With supportive treatment, the patient improved and was having bowel movements through the rectum, and at the end of four weeks went home. Three months later he began to have symptoms of partial obstruction and returned to the hospital. A short-circuiting of the ileum was done. On the fifth postoperative day he developed arterial thrombosis of both common iliacs and died on the seventh day. The patient had had a similar condition of his extremities a few years previously. When the patient's condition will permit, some type of reconstructive surgery has to be done. A good colostomy gives far more comfort than a poorly functioning rectum.

TABLE 11
RUPTURED PEPTIC ULCERS
Percentage Distribution of Cases
According to Sex and Race

	Negro	White	Total
Male	15.0%	73.4%	88.4%
Female	1.5%	10.1%	11.6%
	16.5%	83.5%	100.0%

Distribution of Cases According to Age

Age	Frequency
18-20 years	4
21-25	14
26-30	15
31-35	13
36-40	24
41-45	19
46-50	16
51-55	20
56-60	7
61-65	5
66-70	3
71-75	2
	142

RUPTURED PEPTIC ULCERS

The crater-like architectural pattern of the peptic ulcer is such that the diameter of

its base is the same as the diameter of its mouth. Peptic ulcers frequently rupture. If the rupture is behind the peritoneal covering of the duodenum or posterior wall of the stomach, the symptoms may be those of pylorospasm and may be relieved by antispasmodics and antacids. If the musculature of the duodenum or stomach has been destroyed down to the serous coat when the ulcer ruptures, the perforation is in the nature of a blow-out and, as a rule, the perforation is equal in size to the opening of the mouth of the ulcer. In all probability the size of the perforation is due to the severe contraction of the musculature of the walls of the stomach and duodenum. This lets the secretion and contents of the stomach and duodenum escape into the peritoneal cavity. The primary symptom of a ruptured peptic ulcer is sudden, severe, agonizing pain. When this occurs the patient in most cases will grab his abdomen with both hands and sit down. The abdominal muscles becoming rigid is nature's effort to splint the abdomen and to limit respiratory movements and other movements of the body. The patient has to be carried from the place where he is stricken, if it is possible for him to get help. If the stomach is full, the patient will vomit. The severe agonizing pain, when the rupture occurs, is caused by the escape into the peritoneal cavity of the irritating secretions of the stomach or duodenum. The greater the spill, the more agonizing the pain will be. Symptomatology progresses in direct proportion to the development of peritonitis. There are few things that can be confused with ruptured peptic ulcers. Here the history makes clear the diagnosis. The time element plays a large role in the patient's recovery. Fortunately, the symptoms are so severe that most patients have to seek immediate relief and if there is no procrastination on the part of the physician who first sees him, the patient should get early surgical attention. I would like to review four cases of acute ruptured peptic ulcers which will bring out very forcibly, I think, the matter of a careful history.

Case I. I was called to see Mr. S. early one morning. On arrival I found the patient to be semiconscious with a very distended abdomen, generalized abdominal tenderness and board-like rigidity, a rapid pulse and an elevated temperature. At first I was unable to get any history

since the patient was semiconscious. After careful questioning, the family gave me this history: The young man was delivering groceries and had stopped at a hot dog stand to get a hot dog and a Coca-Cola. Before beginning to eat or drink, he was seized with a severe, agonizing pain in the epigastrium and had to sit down. He was carried home and the family physician called. Morphine was given and the patient advised by the doctor that he would see him the following morning. The patient's condition grew worse and the doctor was called again. After obtaining the above history, I made a diagnosis of ruptured peptic ulcer. The patient was immediately taken to the hospital and to the operating room. At operation a ruptured peptic ulcer the size of a lead pencil was found. The abdomen was full of infected material. After careful toileting of the abdominal cavity, the ulcer was resected, the stomach closed and abdomen drained. The postoperative period was stormy but the patient recovered.

Case II. The patient was brought into the hospital eight hours after the onset of his illness which occurred while he was standing in line at his company's pay office. He was seized with a severe pain which forced him to sit down. He had to be carried home. The family physician saw him and gave him a large quantity of morphine and large doses of magnesium sulfate. On admission to the hospital, the patient was in a coma, respiration four per minute, the pulse fast and thready. The only history obtained was as mentioned above. A diagnosis of ruptured peptic ulcer was made. The patient was operated on without any anesthesia, the magnesium sulfate which had escaped into the abdominal cavity acting as an anesthetic. There was a large perforation in the duodenum and the abdomen was filled with fluid. After the operation the patient was given calcium chloride intravenously in the operating room. When the patient was returned to his bed, he was talking.

Case III. A young man gave a history of a sudden, severe, agonizing pain in the epigastrium while attending classes at school. He had to be carried to the college hospital dispensary. There he was given opiates by the attending nurse and the doctor was called. The following day the general condition of the patient was worse. His father was called. He arrived about noon, at which time I was called and informed that he was bringing his son to the hospital. There had been two or more attempts to wash out the patient's stomach. On admission to the hospital, the patient's abdomen was rigid but immensely distended. There was dulness over the entire abdomen. The patient was practically moribund. A diagnosis of ruptured peptic ulcer was made. On the operating table the patient was given intravenous glucose and saline solution and blood transfusion. When the abdomen was opened, the fluid contents of the abdomen spurted two feet above the abdomen because of tension. A large ruptured duodenal ulcer was found. The patient improved and was able to sit up in bed and eat. About the eighth day the patient became worse and died. Postmortem ex-

amination revealed a large abscess under both leaves of the diaphragm.

Case IV. One night about midnight I was called on the phone by the resident at the hospital. He said, "A patient was just admitted and I am of the opinion that he has a ruptured peptic ulcer but the history is contradictory." I asked him to give me the history he had obtained. He said that the man was working on the roof of a garage when he was seized with a sudden, severe pain in the epigastrium and had to quit work. He became easy after a while and returned to work, working until quitting time. He called the family physician when he reached home. The doctor gave him a hypodermic and stated he would see the patient the following morning. The next morning the doctor gave him more morphine. The patient was able to take food. His condition gradually grew worse. The second physician was called in the late afternoon. He recognized the seriousness of the patient's condition and referred him to the hospital. The patient arrived at the hospital about midnight on the second night after the onset. After hearing this history and the physical findings, my statement to the resident was, "From what you have told me, the patient, in my opinion, has a ruptured peptic ulcer and generalized peritonitis but your history is incorrect." At operation, a ruptured peptic ulcer with generalized peritonitis was found. The following morning I obtained this history. The man was working on the roof of a garage when he was seized with a sudden, severe, epigastric pain and had to be taken off the roof. A fellow worker went to a nearby house to get something to relieve him but was unable to obtain anything. The patient was carried home. The family physician came and gave him morphine. As most laymen think that you have to give the patient nourishment when he is sick or he will get weak, the family insisted and all but drowned him with orange juice. This added insult to injury. The doctor later gave him more morphine but the patient grew worse. A second physician was called and referred the patient to the hospital. If the resident had been able to obtain this history, there would have been no doubt in his mind of the diagnosis.

We have resected all of our ruptured ulcers and then reinforced them by tacking omentum over the suture line. A careful toilet is made of the contaminated portion of the abdominal cavity. If the contamination has not been too great, the cavity is not drained. A tube is always left in the incision with the end of the tube over the repair of the ulcer. Microsulfathiazole and penicillin are put in the abdomen and the tube withdrawn. Penicillin is given intravenously, 50,000 units every three hours, and the patient is placed in an oxygen tent, negative pressure continued and proctoclysis instituted. Our mortality rate in patients

operated on during the first eight hours after perforation has been 31.5%.

TABLE 12

RUPTURED PEPTIC ULCERS

Detailed Study of 59 Cases With Best Data

Duration of Perforation to Operation	Improved	Died	Total
2 hours	2	0	2
4	10	0	10
8 (a large percentage on border line)	17	3	20
12	12	2	14
24	6	1	7
48	2	2	4
72	1	0	1
Over	51	8	59

Mortality of cases operated on within 8 hours was.....	9.6%
Mortality of cases operated on over 8 hours was.....	17.9%
Onset began with severe pain	59
History of nausea and vomiting	42
No history of nausea and vomiting	17
History of tenderness with marked rigidity	59

TABLE 13

RUPTURED PEPTIC ULCERS

Incidence and Mortality

Year	Number of Operations	Deaths
1923	2	2
1924	4	3
1925	1	1
1926	3	2
1927	5	1
1928	8	5
1929	6	0
1930	5	2
1931	3	1
1932	7	2
1933	3	1
1934	2	1
1935	5	2
1936	1	0
1937	9	2
1938	5	1
1939	11	2
1940	8	0
1941	8	5
1942	15	4
1943	8	2
1944	9	2
1945	8	1
1946	6	0
	142	42

Mortality percentage 29.5.

ABORTION AND RUPTURED ECTOPIC PREGNANCY

Ruptured ectopic pregnancies include rupture of the tubes and tubal abortion. A careful menstrual history is one of the most important factors in making a diagnosis. There is always a missed menstrual period. Uterine bleeding may come on within ten days after the regular period should have occurred and may lead the patient to say she has not missed a period but was only a few days late. This intermittent bleeding continues. Then after a period of from one day to two or more weeks, there is a sudden, severe pain in the lower abdomen followed by tenderness, especially on the side of the pregnancy. There are early symptoms of shock, faintness and sweating. The symptoms are more severe in the rupture than in the abortive type. Shock is in direct proportion to the

amount of hemorrhage. There is a chemical peritonitis with tenderness. Sometimes there is pain in the region of the clavicle when the hemorrhage gravitates up to the diaphragm. In ruptured ectopic pregnancies the history and physical examination play a very important part. On vaginal examination one finds tenderness when one presses against the cervix and a full feeling in the pelvis which is in proportion to the amount of hemorrhage. A mass may be felt if there is sufficient relaxation in the region of the affected tube. Most frequently the mass is sausage-shaped. Here too, the time element is very essential to the welfare and recovery of the patient. Surgery is necessary regardless of the patient's general condition. If her condition is bad, blood and other solutions should be given intravenously and the patient prepared as quickly as possible for operation. Under general anesthesia, the abdomen is opened, the blood salvaged and given as autotransfusion. The bleeding tube is clamped and removed.

ACUTE MECKEL'S DIVERTICULUM

We have on record six operative cases of acute Meckel's diverticulum from January 1, 1923 to January 1, 1947. In every instance the patient gave all the chronologic symptoms of acute appendicitis, and in all of these cases except one a preoperative diagnosis of acute appendicitis was made. One of the six cases was a little girl from whom I had removed an acute gangrenous appendix seven days previously. The day she was to leave the hospital, she developed another attack which gave all the chronologic symptoms of acute appendicitis. This is the only case in which a preoperative diagnosis of acute Meckel's diverticulum was made. The patient was operated on and a Meckel's diverticulum which was becoming gangrenous was removed. We want to add one more patient (a child) who was operated on in January 1947 and was not included in this series. The case was diagnosed preoperatively as having a ruptured peptic ulcer in a Meckel's diverticulum. The child was under the observation of our pediatrician and had had several repeated attacks of colicky pain which was not characteristic of appendicitis. She had had bleeding from the bowel during the last attack and had developed peritonitis. In this case the pediatrician made a diagnosis of an acute

ruptured peptic ulcer in a Meckel's diverticulum. At operation the diagnosis was confirmed. With the aid of sulfonamides, penicillin and drainage of the abdomen, the patient made an uneventful recovery.

RUPTURED FOLLICULAR CYSTS OF THE OVARY

Ruptured follicular cyst of the ovary is one of the most confusing of acute abdominal conditions. The pain may be severe but is always sudden in onset and begins in one of the lower quadrants of the abdomen. The right ovary is more frequently affected and the symptoms are often confused with those of appendicitis. There is muscle spasm and tenderness; seldom any nausea or vomiting. The leucocytosis is that of acute appendicitis, a high polymorphonuclear cell count. It is more frequently diagnosed incorrectly as acute appendicitis than any other acute condition of the abdomen. A carefully taken history will reveal that the onset is usually about five to fifteen days before the next menstrual period. These patients' symptoms subside in twenty-four hours if the hemorrhage has not been large, although some tenderness and soreness in the region of the ovary remain for three or four days. These patients are more often operated on for acute appendicitis than any other except acute Meckel's diverticulum. Sometimes the hemorrhage will be great and the patient will be in severe shock. Two patients were admitted in severe shock. Both were diagnosed as abdominal hemorrhages and had to be transfused (autotransfusion) during the operation. No lesion was found in either case except a ruptured follicular cyst.

ACUTE PELVIC INFLAMMATORY DISEASE

Acute pelvic inflammatory conditions are not so difficult to differentiate from acute abdominal conditions if a proper history is taken and a careful physical examination made while the infection is confined to the pelvis. The onset of symptoms is gradual. A bimanual vaginal examination and vaginal smears should be made. Vaginal examination causes pain when the cervix is pressed upward. Often masses can be felt. The picture is changed when the general abdominal cavity becomes involved. Then there is generalized abdominal pain and distention. As long as the infection remains in the pelvis, the patient has very little dis-

comfort in moving her body about the bed. If the appendix is in the pelvis or hanging over the rim of the pelvis, it may become involved but the classical symptoms of appendicitis will be absent.

ACUTE PANCREATITIS

No disease is ushered in by a more stormy onset than acute pancreatitis, especially the hemorrhagic type. This is best explained by reporting a case. A patient was brought to the hospital one morning in an extreme condition. The following history was given. Before breakfast the patient went to the barn and fed his mules. On the way back from the barn he was seized with a sudden pain in the epigastrium. The pain forced him to sit down and call for help. The family doctor was called and gave him morphine before he sent the patient to the hospital. On admission the patient was in extreme shock. A diagnosis of ruptured peptic ulcer was made. An operation was performed, no ulcer was found, and a large hemorrhagic pancreas was present. Since the development of urine and blood amylase tests, the diagnosis can be made with greater ease and certainty. Surgery is not advised.

MESENTERIC THROMBOSIS

The onset of mesenteric thrombosis is sudden and severe with marked shock. If the ileum is involved, there is generalized tenderness over the abdomen. The tenderness will be in the area of involvement if it is in the colon. It has to be differentiated from acute pancreatitis and ruptured peptic ulcer. As the pathologic changes progress, the patient develops ileus, vomits and may pass bloody material from the bowels. At this stage a diagnosis can be made in about 50% of the cases.

CONCLUSIONS

The acute abdomen is a daily problem to the general practitioner, pediatrician, internist, surgeon and gynecologist. We believe that 95% of acute abdomens can be diagnosed if a proper history can be obtained and physical examination is properly made. The first consideration in an acute abdomen must be to determine the nature of the condition at the time of the patient's first symptoms. Past history should not be delved into until a complete history of the present illness has been taken and present physical findings determined. What the

surgeon wants to know is what the patient has now; not what he has had. By this I do not mean that a past history should not be obtained; but if it is obtained along with the present illness, it could be very confusing and misleading to the young surgeon. The first conclusion one should try to reach is whether or not one is dealing with a surgical abdomen. No patient with an acute abdomen should be left until the surgeon has reached a definite conclusion as to the type of treatment the patient is to receive. Chemotherapy should not be used in patients with acute abdomens except during or after operative procedures. The use of chemotherapy can be dangerous, for even though the patient has been seen soon after the onset of symptoms, thrombosis of the blood supply to the affected area with necrosis, or the accumulation of pus, may already have taken place in the more virulent infections. Although chemotherapy

seldom does much to relieve such a condition, as an adjunct to surgery it may be a great benefactor to both the surgeon and patient.

In closing I wish to reemphasize the importance of a careful history when it is possible to obtain one: There should be a careful physical examination and a quick determination of findings followed by an early operation if the diagnosis of acute surgical abdomen has been made. When there is reasonable doubt, surgery should be instituted. With the present day surgical technique in the hands of skillful operators, the patient takes less chance by having a useless operation than by risking the occasional fatal termination resulting from not having the proper operation at the proper time. This is especially true in patients with perforated ulcer of the stomach or duodenum, gangrenous gallbladder or gangrenous appendix.

PENICILLIN, STREPTOMYCIN AND TYROTHRIN IN DERMATOLOGY

PAUL G. REQUE, M. D.

Birmingham, Alabama

The release of the antibiotics from governmental control and the resulting widespread use of these substances have produced a large volume of reports of their effectiveness in skin diseases. Many of these efforts are conflicting in nature and apparently have not taken into consideration the basic principles of dermatologic treatment which is so necessary in the evaluation of new medicaments. Too many new pharmaceutical preparations have too short a period of laboratory investigation, an initial burst of enthusiasm in clinical trial, then a period of condemnation followed years later by a proper appraisal of the drug's true worth and place in medical treatment. Scientists have been familiar with antibiotic substances for more than 50 years, and have experimented with more than 40 different types in that period, but in the present early stage of clinical evaluation it is still too soon to state unequivocally that antibiotics will

not follow the all too-familiar pattern described in the preceding statement.

Penicillin has been readily available for little over two years, during which period it has been used in many skin conditions. Neglect of the fundamentals of dermatologic therapy, such as absorbing discharges from oozing lesions, debridement of encrusted lesions, the use of proper vehicles which will mix or penetrate serous discharges or soften tough and horny crusts, and the surgical principle of establishing drainage in enclosed pus will necessarily promote disappointing case reports. It is well, therefore, to determine as far as possible and practicable whether one or all of the following conditions prevail in a given skin disease before using one of the antibiotics:

1. "Is the disease due to a microbial organism, and is that organism susceptible to the antibiotic?"

2. If the answer to 1 above is in the affirmative, then the question is, "Can it be reached without further measures, such as removal of crusts and debris, or surgical drainage?"

Presented at a symposium conducted by Medical Alumni of Duke University Medical School, Durham, N. C., April 24-26, 1947.

3. The third question should be, "What vehicle should be used in order to get the medicament to the lesion? Should it be applied as an aqueous compress, given parenterally, or used in a water soluble absorptive-base ointment, or possibly in a water suspension?"

The above necessarily goes through the dermatologist's mind by habit as he considers his problem as affecting the success or failure of his therapy, and in the evaluation of the antibiotics these principles must be adhered to. Not all of the credit is due to the use of the antibiotic, and it is not easy to form an opinion in true perspective from reading the medical literature relating to them. An effort to compare the effectiveness of penicillin, streptomycin and tyrothricin with other methods of treatment seems the most practical approach to this evaluation, with particular reference to (1) the time needed to effect a cure, (2) the relative efficacy of the treatment when applied by an untrained person (the patient), as well as (3) the ability of the particular agent to effect a satisfactory outcome in a disease heretofore resistant to other treatment methods.

TABLE 1

Anticipate *Excellent* Results Using Penicillin In

- Impetigo contagiosa
- Cellulitis, acute
- Pyogenic dermatitis
- Anthrax
- Vincent's stomatitis
- Syphilis, cutaneous
- Gangrenous stomatitis (noma)
- Erysipelas
- Erysipeloid (swine bacillus)

Discussing penicillin first, four tables have been prepared keeping the above criteria in mind. Table 1 lists the dermatoses in which penicillin appears to be superior to other treatments. Of these ten diseases, only one, impetigo contagiosa, responds readily to topically applied penicillin, preferably in ointment consisting of 500 units of penicillin per gram of water soluble ointment base. Pyogenic dermatitis may respond to penicillin compresses, 250 units per cc. of normal saline, but if it is used it is advisable to use parenteral penicillin in addition since the disease is generally one also involving the deeper layers of the skin. All others listed should be given intramuscular penicillin in adequate dosage of not less than

25,000 units every three hours for five to seven days in aqueous solution, or 300,000 units daily of intramuscular penicillin-in-peanut oil-beeswax emulsion for the five to seven days. Occasionally a longer period of treatment will be necessary, depending upon various local factors, and as in the case of cutaneous syphilis a much higher total dose given over a proportionately longer time will be required.

TABLE 2

Anticipate *Good* Results Using Penicillin In

- Ecthyma (ulcerative impetigo)
- Impetigo neonatorum
- Carbunculus
- Cellulitis, chronic
- Actinomycosis
- Tropical ulcer (phagedenic)
- Hidradenitis suppurativa
(chronic axillary adenitis)
- Infectious eczematoid dermatitis
- Nodular non-suppurative panniculitis
(Weber-Christian's disease)
- Bullous orificial erythema multiforme
(Stevens-Johnson's disease)

Table 2 consists of ten conditions which are as well treated by means of penicillin as by any other known means, and the deciding factor may well be economic, ease of application in the home, or any other reasonable basis. Some of the diseases listed in this category may eventually be treated by means of penicillin by choice, but inasmuch as very few patients are seen with Weber-Christian's or Stevens-Johnson's diseases the reports are not yet fully confirmed, and it is considered advisable to place them in the "good" result group rather than the "excellent" one.

TABLE 3

Anticipate *Fair* Results Using Penicillin In

- Furunculosis
- Sycosis vulgaris (barber's itch)
- Pemphigus vulgaris (?)
- Lupus erythematosus, chronic discoid (?)

Table 3 concerns five diseases in which penicillin is listed as of doubtful value. Furunculosis responds temporarily in most instances, but a few cases apparently are influenced favorably and do not recur. Conjectures concerning a favorable tipping of the scales so that individual resistance becomes sufficient to control further outbreaks of furuncles are, of course, merely explanations with little basis of fact. Note the inclusion of pemphigus vulgaris in this table.

It is one of the diseases generally regarded as not responsive to penicillin, but two cases have been reported as having been temporarily, at least, relieved of pemphigus and one is recorded from Duke Hospital. However, in this almost certain fatal disease, any aid is well worth mentioning, since no other remedy is satisfactory in more than an isolated instance.

TABLE 4

Penicillin Has Not Proved Of Value In

Acne vulgaris
Ulcer, hemostatic
Ulcer, decubitus
Dermatitis repens
Lupus erythmatosus, acute disseminate
Coccidioidomycosis, cutaneous, late
Lymphopathia venereum
Chancroid
Granuloma inguinale
Tuberculosis, cutaneous
Leishmaniasis Americana
Blastomycosis, cutaneous
Dermatitis herpetiformis
Moniliasis (thrush)

Table 4 is a list of fourteen dermatoses in which penicillin is of no value, or another remedy is far superior as a therapeutic measure.

TABLE 5

Streptomycin Is Of Apparent Value In

Tuberculosis, cutaneous
Chancroid
Dermatoses due to proteus vulgaris
Dermatoses due to other gram-neg. organisms
Granuloma inguinale

Streptomycin Is Not Of Value In

Syphilis, cutaneous

Streptomycin is next considered as a dermatologic therapeutic measure. Experience with this antibiotic has been limited because of the small supply. Only five conditions are listed in Table 5, and in none of these has a sufficient number of cases been observed over a long enough period to state unequivocally streptomycin's value. Time and an increasing supply of the substance will tell us much in the future. Results in cutaneous tuberculosis have been good in some cases, but relapses in scrofuloderma have been observed several times. The antibiotic must be given parenterally in doses from 1 to 4 grams daily, and over a period of from 60 to 90 days, and at the present cost it becomes prohibitive for all but very wealthy patients unless it is available under research grants. The other der-

matoses listed are isolated patient reports, or still in experimental channels. Streptomycin has not proven of value in the control of rabbit syphilis, and there is no indication it will prove of use in human syphilis. There is good reason to believe that granuloma inguinale will respond to streptomycin therapy and it is hoped this hitherto treatment-resistant disease will be more easily controlled in the future.

Tyrothricin, a mixture of gramicidin (25%) and tyrocidin (60%), is an antibiotic suitable for local use only, as it is too toxic when given in the tissues. It is commonly used as a compress in aqueous-alcoholic solution containing 100 mg. tyrothricin per 100 cc. of liquid, or as "Intraderm" tyrothricin, a specially prepared penetrating wetting agent. As a therapeutic agent it has proven useful in a number of cutaneous dermatoses of infectious origin. Its major contribution seems to be in its lack of sensitizing properties, but its performance has not been dramatic as a rule. It is insoluble in saline solution and does not appear to be particularly effective in ordinary ointment bases. It may well be used when difficulties are encountered with penicillin or other proven types of medication, especially in chronic ulcerative conditions requiring prolonged treatment. Table 6 lists those conditions in which it is useful.

TABLE 6

Tyrothrycin May Be Of Help In

Furunculosis
Ecthyma
Folliculitis
Decubitus ulcer
Acne vulgaris pustulosa
Hemostatic ulcer
Impetigo contagiosa
Cellulitis, acute and chronic
Sycosis vulgaris

Tyrothryin May Be Of Help In

Dermatitis repens

As may be noted only forty-odd skin conditions are listed in the tables. There are over three-hundred defined entities in dermatology, and a large number of these are due to infective agents, but it will require a much longer period of observation to obtain an evaluation in all of the possibly favorably affected dermatoses of bacterial nature. Of these forty discussed here only three conditions are without any promise of cure—acute disseminated lupus erythe-

matosus, dermatitis herpetiformis, and late cutaneous coccidioidomycosis. It will be of great interest to note what we may expect of some of the recently studied antibiotics, such as bacitracin, in the future.

In summation the reasons for some of the failures with antibiotic therapy are (1) not all bacteria and other infective agents are inhibited by our presently available antibiotics, (2) apparently it is necessary to use them in an intensive fashion early in the course of the disease, since there is considerable information accumulating concerning induced resistance to these agents especially when small initial doses are used, (3) the relatively high incidence (5% plus) of local and general hypersensitivity to penicillin when used for more than a few days, (4) the need for due emphasis to be placed upon making it possible for the antibiotic to reach the focus to be treated, (5) and the fact that the antibiotics do not themselves alter the individual's immuno-biologic relationship with the underlying pathologic condition. Recognition of these reasons for failure and not expecting the antibiotics to do all the work alone will undoubtedly improve our treatment results. It is interesting to quote from a recent surgical article in this connection: "No available antibacterial agent can completely sterilize an open wound. Topical or local chemotherapy has been discarded as ineffective and deleterious." The present discussion would lend support to this conclusion, with the proviso that the addition of the antibiotics probably is not as often deleterious as it is ineffective.

TABLE 7
PENICILLIN

1. Modes of administration
 - (a) Intramuscularly
 - (b) Intravenously
 - (c) Topically
2. Toxic manifestations
 - (a) Upon parenteral or oral administration
 - Urticaria
 - Erythema multiforme
 - Exfoliative dermatitis
 - "Serum sickness" reaction
 - Erythema
 - (b) Upon topical use
 - Contact sensitization

Finally, a study of the toxic effects of the discussed antibiotics leaves something to be desired by way of improvement in penicillin and in streptomycin. Five percent or more

TABLE 8
STREPTOMYCIN

1. Modes of administration
 - (a) Intramuscularly
 - (b) Intravenously
 - (c) Topically
 - (d) Oral use is not satisfactory
2. Toxic manifestations
 - (a) Upon parenteral administration
 - Tinnitus (often severe)
 - Vertigo (often severe)
 - Deafness (may be permanent)
 - Various vesicular, papular, and erythematous eruptions
 - (b) Upon topical use
 - None known

TABLE 9
TYROTHRYCIN

1. Mode of administration
 - (a) Topically *only*, as this substance is too toxic for other use.
2. Toxic manifestations
 - (b) Few encountered thus far. Any substance may act as sensitizer, however.

of toxic manifestations resulting from the administration of any medicament, even though not serious, is disconcerting. The addition of a generalized urticaria, a simple erythema, or erythema multiforme to a relatively benign dermatosis may be very startling to the patient, and is indeed often very upsetting. A serum-sickness type of reaction, with painful swelling of the joints, or an exfoliative dermatitis may prove so serious as to prolong illness considerably, or to hospitalize a previously ambulatory patient. The use of one of the antihistamine drugs, benadryl or pyribenzamine, does help to alleviate most of these side-reactions, and may, if given concurrently, prevent their appearance, but occasionally it will be necessary to stop the medicament because of the potential danger associated with a generalized exfoliative form of dermatitis, or serum-sickness reaction. The vertigo and permanent deafness associated with the administration of streptomycin is a very serious objection to its use; however, in tuberculosis the seriousness of the disease must be weighed against the benefits from its use.

SUMMARY

1. Penicillin is of great value in the treatment of certain microbial dermatoses due to penicillin-susceptible causative organisms.

2. Streptomycin may prove of help in cutaneous tuberculosis, and dermatoses due to gram-negative organisms.

3. Tyrothricin is of value in chronic ulcerative dermatoses and in other skin conditions when prolonged medication is indicated.

4. Adherence to sound principles of dermatologic debridement, effective surgical drainage, and to the antibacterial actions of antibiotics is necessary for satisfactory results in dermatologic therapy.

5. The untoward reactions of penicillin and streptomycin may be serious enough to vitiate satisfactory progress in any disease.

6. Suitable vehicles for the antibiotics and simultaneous parenteral administration in large dosage are prerequisites for successful therapy.

7. The propensity for penicillin to induce local and general hypersensitivity, apparently less striking in streptomycin, and absent in tyrothricin, is a serious objection to its prolonged or repeated topical use.

811 South 20th Street
Birmingham, Alabama

BIBLIOGRAPHY

1. Aldrich, C. A., and Holmes, C. A.: Treatment of Impetigo Neonatorum with Minimal Doses of Penicillin, *Am. J. Dis. Child.* 72: 279-280, Sept. 1946.
2. Callaway, J. L.; Avena, J. M.; Noojin, R. O., and Riley, K. A.: Pemphigus, Successful Treatment with Penicillin; Report of Case, *J. Pediat.* 28: 592-594, May 1946.
3. Callaway, J. L., and Barefoot, S. W.: Immunological Studies on Patients Developing Urticaria Associated with Penicillin Therapy, *J. Invest. Dermat.* 7: 285, Dec. 1946.
4. Dressler, Sidney, and Dwork, R. E.: Reactions to Penicillin, *J. A. M. A.* 133: 849 (March 22) 1947.
5. Fowler, E. P., and Seligman, E.: Otic Complications of Streptomycin Therapy, *J. A. M. A.* 133, 87, 1947.
6. Goldfarb, A. A.: A Case of Stevens-Johnson's Disease Treated with Penicillin, *J. Pediat.* 28: 579 (May) 1946.
7. Herrell, W. E., and Nichols, D. R.: The Clinical Use of Streptomycin, *Proc. Staff Meet., Mayo Clin.* 20: 449 (Nov.) 1945.
8. Hinshaw, H. C.; Feldman, W. H., and Pfuete, K. H.: Treatment of Tuberculosis with Streptomycin, *J. A. M. A.* 132: 778-782 (Nov. 30) 1946.
9. Keefer, C. S.: Streptomycin in Infections, *J. A. M. A.* 132: 70-78 (Sept. 14) 1946.
10. Lyons, Champ: Chemotherapy in Management of Wounds, *J. A. M. A.* 133: 215-216 (Jan. 25) 1947.
11. Meleney, F. L., and Johnson, B.: Bacitracin Therapy, *J. A. M. A.* 133: 675-680 (March 8) 1947.
12. Neuroth, M. L.; Lee, C. O.; Christian, J. E., and Jenkins, G. L.: Study of Penicillin Ointments and Creams, *J. Am. Pharm. A. (Scient. Ed.)* 35: 321-324 (Nov.) 1946.
13. O'Leary, P. A., Hinshaw, H. C., et al.: Treatment of Various Types of Cutaneous Tuberculosis with Promizole and Streptomycin, *Arch. Dermat. and Syph.* 55, 222, 1947.
14. Pillsbury, D. M.: Management of Bacterial Infections of the Skin, *J. A. M. A.* 132: 692-698 (Nov. 23) 1946.
15. Rankin, L. M.: Use of Tyrothrycin in the Treatment of Ulcers of the Skin, *Am. J. Surg.* 65: 391 (Sept.) 1944.
16. Vogel, H. R.: Reactions to Penicillin, *Arch. Dermat. and Syph.* 54: 713 (Dec.) 1946.

Tuberculosis in Infants—The demonstration of tubercle bacilli in material from a suspect lesion is the only means by which a diagnosis can be made with certainty except in the occasional instance when biopsy material can be obtained for histologic examination. While it is not always possible to demonstrate tubercle bacilli from a child with an active tuberculous infection, it frequently is possible provided that suitable material for examination is obtained and that the laboratory work is carefully performed by an experienced technician.

When the suspected lesion is in the lungs and the child is too small to expectorate, material for examination may be obtained by bronchoscopic aspirations or by gastric lavage. The latter procedure is the more widely employed for obvious reasons. It should be performed an hour or so before the usual breakfast time so that the stomach will not have been emptied of the material which has gravitated into it from the respiratory tract during the night hours. All material, irrespective of its source, should be concentrated with alkali before it is subjected to bacteriologic examination, which includes direct smear and staining, and either culture on artificial media or inoculation of non-tuberculous guinea pigs. There should be at least three negative examinations before the patient is considered to be noninfectious.

The tuberculin test provides the most accurate means available for the identification of persons who have had tuberculous infections. The accuracy of the test is well over 95 per cent. In the short period of from three to eight weeks or so immediately following the initial infection with the tubercle bacillus and prior to the development of allergy there is no skin reaction to tuberculin. Subsequently, tuberculin allergy may disappear during the terminal stage of fatal tuberculous disease and temporarily during any acute febrile disease. If these exceptions are kept in mind the tuberculin test will be found to be an exceedingly useful tool in the evaluation of a particular patient and for a survey of family or larger groups for the detection of those persons who have had a tuberculous infection. —Nelson, *Texas State J. Med.*, January 1948.

FRACTURE OF EDENTULOUS MANDIBLE

OPEN REDUCTION AND FIXATION WITH TANTALUM WIRE

GEORGE W. MATTHEWS, M. S., D. D. S.

Birmingham, Alabama

Because no teeth are present to exhibit the disturbing deformity and malocclusion that is so obvious in other mandibular fractures, those of the edentulous mandible are frequently treated by the so-called "conservative method" of being left alone. This is probably often influenced by the fact that most of these fractures occur in elderly patients who are not the very best operative risks, plus the hesitancy of many dental surgeons in making an external opening. By no manner of means is it thought that *every* edentulous mandibular fracture should be treated by means of an open reduction. Fortunately, after there has been considerable atrophy of the mandible the muscle pull is also diminished and we do not find the marked displacement of the fragments that we do in those with teeth. In many cases the wearing of the old denture, accompanied by a supporting elastic bandage under the chin, will work very satisfactorily.

There are some cases, however, in which we find such marked displacement and overlapping of the fragments that even if union occurred without reduction, the resulting union would leave a condition that would be very unfavorable for the wearing of dentures again. Such a case is presented herewith.

REPORT OF CASE

History: On March 13, 1947, a woman, aged 52, stepped from the running board of a slowly moving automobile, slipped and fell on her face. She sustained a fracture of the right side of the mandible; a laceration of the chin and brush burns of the hands, knees and elbows. No other bones were fractured and there was no evidence of brain injury. The laceration was sutured; abrasions cleaned and dressed, and an attempt made to fix the fractured mandible by putting in the patient's lower denture, but due to marked displacement of the fragments it would not go to place. The patient was sent to me on March 15, two days after injury occurred.

Examination: The patient was a thin "wiry" type woman who had always been

very strong and healthy. There was marked edema and ecchymosis of the chin and right side of the mandible and also of the floor of the mouth. Both mandible and maxilla were edentulous and the ridges showed considerable atrophy. The patient stated she had been wearing dentures for about fifteen years.

Bimanual palpation revealed marked displacement of the fragments, and the lower denture would not begin to go to place. Due to the anterior fragment being pulled distally the mandible was in extreme distal relationship to the maxilla, so that if union had occurred with the fragments in this position, the ridge relationship would have



Figure 1.—Fracture of edentulous mandible through middle of the body of the right side. Note marked overlapping of fragments and the diminished distance between the angle and symphysis. (This roentgenogram was made with the upper denture in place.)

been such that wearing dentures successfully would have been very doubtful. The fracture was apparently not compounded into the mouth.

Roentgenographic Examination: Roentgenograms (Fig. 1) revealed a transverse fracture of the right side of the mandible about the middle of the body, with a 2 cm. overlap and apparently no comminution.

Operation: The patient was hospitalized, and on March 17, 1947, under sodium pentothal anesthesia, an open reduction was performed. An incision was made beneath the lower border of the mandible and the two ends of the fragments exposed. This was much simpler than in most cases due to the thinness of the patient's face and absence of fat. The external maxillary artery was located and retracted without having to be ligated. Two holes were drilled in each fragment, the smallest drill available being

used and care exercised not to create heat by rapid drilling. After drilling the holes in the anterior fragment the fragments were placed in proper position and the location for the holes in the posterior fragment marked so they would coincide with those in the anterior one. Tantalum wire, .025 of an inch in diameter, was placed through the holes and twisted tight under the lower border of the mandible. The fragments came into perfect position and alignment and were very firmly fixed. The deep tissue was closed with 00 catgut and the skin with black silk. Dressing was collodion over wisps of cotton.

No blood could be seen inside the mouth after the operation and the general postoperative condition of the patient was good.

Course: There was a moderate amount of external swelling on the first postoperative day but practically no pain and the patient commented on how much better she could swallow and move her jaw without pain. Two days later it was possible to put the lower denture in place. The sutures were removed on the fifth day and the patient discharged on the sixth. Postoperative roentgenograms (Fig. 2) revealed perfect position of the fragments. The mandible felt very firm to manual manipulation. The patient has been observed periodically and apparently has a very firm union with no evidence of any irritation to the tissues from the wires.

1922 Tenth Avenue South



Figure 2.—Roentgenogram made after open reduction and fixation with tantalum wire. Note the perfect alignment of the inferior border of the mandible; the absence of any overlapping and the increased distance from angle to symphysis as compared with Figure 1.

Industrial Health—No general discussion of industrial health would be complete without special reference to health service to the small industry, where it is estimated that 85 per cent of industrial workers are employed. It is the general belief that the hazards of industrial poisons are present chiefly in the large plants and seldom in the small ones. There is, however, good reason to believe that the individual worker in the small plant is exposed to more hazards or to the same hazards in more ways than the man in the large plant. A number of statistical studies indicate that absenteeism due to non-occupational accidents and diseases is greater in the small establishment than in the large. The problems surrounding the provision of industrial health service to this important segment of the working population has received the serious consideration of several groups, and there has been ample demonstration that a satisfactory solution can be worked out through the cooperative efforts of medicine, management and labor.—Seeger, South. M. J., Jan. '48.

Silicosis—Silicosis is comparatively a new name in medicine. Its pathology and clinical symptoms are not new but really represent one of the oldest of human afflictions and date back to the stone age. Hippocrates referred to the short life of miners as the ill effects of inhaling dust. He called mining a dangerous occupation which caused asthma, dyspnea, and phthisis; hence the name miner's disease or miner's tuberculosis.

A special committee of the American Public Health Association defines silicosis as a disease due to prolonged breathing of air containing silicon dioxide, which is characterized anatomically by generalized fibrotic changes and the development of miliary nodulation in both lungs, and characterized clinically by shortness of breath, decreased chest expansion, lessened capacity for work, cough, pain in chest, absence of fever, increased susceptibility to tuberculosis, some or all of which symptoms may be present, and by characteristic x-ray findings.

Within the past few years extensive investigation has been made on the harmful effects of dust on the lungs. The recognition of silicosis as being a true occupational disease has stimulated the interest of internists, health authorities, and industrialists toward further study of this insidious, incurable malady, which saps the strength and energy from the young and vigorous in a few brief years.

A few states have enacted legislation to provide compensation for disabled persons who have lost their health due to occupational environment, the inhalation of dust, and obnoxious gases. Silicon dioxide seems to be the most common and widespread industrial hazard. Asbestosis is said to be more serious though occurring in limited areas. Aluminosis seems to give little concern. Anthracosis or coal miner's disease does not give the early clinical symptoms and pathologic changes as silica dust. Approximately one million laborers in the United States are now exposed to occupational diseases caused by silica dust. These are chiefly found in the mining and smelting of copper, gold, silver, lead, zinc, iron, limestone, the crushing and blasting of stone, marble and quartz. It is also found in drillers' blockers, chuckers, moulders, glassworkers, metal workers, cement workers, pottery and tile workers, grinders and abrasive workers, marble cutters and polishers, soapmakers, painters, dental technicians, and diamond miners.

Silicosis has no parallel in the annals of medicine. It is non-contagious and non-infectious; it is afebrile, non-bacterial, and non-virus. It does not respond to sulfa drugs, penicillin or any known treatment. The etiology of silicosis is silica dust laden atmosphere and it is the finer particles less than 10 microns which find their way into the air sacs that do the greatest damage. The larger particles of dust are intercepted, reversed in direction, and to a great part disposed of in the upper air passages by the specific wave-like action of the ciliated epithelial lining of the trachea and larger bronchi.—Hicks, J. M. A., *Georgia*, December '47.

Coronary Heart Disease—The classical picture of an acute myocardial infarction includes pain which is often identical in location and radiation with that of angina pectoris. But the pain persists for a longer time and is usually associated with more fear and often with evidence of shock, in the form of prostration, sweating, pallor and a fall in blood pressure. Within the first few days objective evidence that ischemia has produced muscle necrosis appears in the form of leucocytosis, fever, increased sedimentation rates and urobilinogen in the urine. If the pain responds at all to nitroglycerin or amyl nitrite, the response is usually incomplete and temporary.

An important number of patients have vomiting and reference of pain to the upper abdomen so that an acute abdominal condition may be simulated, particularly when leucocytosis and fever are present, and the electrocardiogram is normal. In these cases the history is of paramount importance for such cases do not tolerate operation well or even several days of x-ray studies. Conversely, although rarely, an abnormal electrocardiogram from earlier myocardial insults may be misleading and result in overlooking an acute abdominal condition.

It is always emphasized, but not always acted upon in practice, that the electrocardiogram is a useful tool but not infallible. Even the multiple chest leads leave us 5 per cent of cases with infarction but normal electrocardiograms. Furthermore on the day of the attack the tracing may be normal and characteristic changes may not appear for several days. When the tracing is grossly abnormal one must still exercise judgment so as not to overlook some acute non-cardiac condition unrelated to a remote or recent myocardial infarction.

Most myocardial infarctions are medical emergencies and energetic treatment is justified, for the stake is often many years of useful existence for the patient. If the patient is seen at home, prompt relief of pain is imperative to relieve whatever degree of the ischemia may be due to only coronary vessel spasm from the pain. Morphine sulphate is still the most effective agent in our opinion, nothing else seeming to relieve both pain and terror so well. At the same time, intramuscular sedation with sodium phenobarbital lessens the amount of morphine necessary, and prolongs the relief of fear and anxiety. Often at the beginning of the attack, bizarre irregularity and short periods of ventricular standstill occur, with faintness which, if not treated with small doses of adrenalin, may end the contest. We use from three to five minimum doses repeated as necessary. If the primary battle is to be fought at home, oxygen should be called in from the nearest local source, even if that is a garage. It can be given very effectively through a small catheter inserted through the nose. When the attack has been this severe and has been tided over by such measures, transportation to the hospital by ambulance should be arranged, where oxygen can be continued by tent if necessary, and where close observation is possible over the next uncertain week or two.—Schemm, *Rocky Mountain M. J.*, Jan. '48.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham
C. E. ABBOTT Tuscaloosa
JOHN L. BRANCH Montgomery
D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

February 1948

THE PRESIDENT'S PARAGRAPH

THE PROGRAM

In the next issue of our Journal the completed program for the April meeting in Mobile will appear. Building a program is not an easy task. Many things have to be taken into account. In planning this program the interests of the profession in general, and the special fields in particular, have been given consideration. It is not possible to have every medical group represented, but every subject to be presented will be of value and interest to the doctor doing general practice.

Disappointment will be felt by many who have desired a place on the program. Indeed, many excellent papers, with authoritative information and data, could not be used this time. So, it is hoped that all may feel that the President has done his best in presenting a strong and informative program for the meeting in Mobile.

HOTEL RESERVATIONS

It is understood that reservations will soon be exhausted. If you have not made arrangements for hotel accommodations, you should do so now. The management of the hotels suggests that it will help the situation greatly if you are willing to share the room

with another doctor. By doubling up, more can be accommodated.

GUESTS OF THE ASSOCIATION

We would enjoy having physicians from the Gulf Coast area as guests at all sessions of the convention. It is suggested that any physician of the state who can extend a personal invitation to medical friends of adjoining states should do so, inviting them in the name of the State Medical Association. Your President is anxious to make this the best and the largest attendance of any meeting ever held in Mobile.

J. P. Chapman

WEIL'S DISEASE

"Although Weil's disease is frequently mentioned in various classifications of the causes of jaundice, it has attracted little attention as a condition that can simulate an acute surgical condition of the abdomen. This is not at all surprising because the disease is generally considered to be quite rare in this country. In fact, state and city health departments have only recently become equipped to undertake the proper diagnostic laboratory procedures.

"We became interested in this problem during a review of cases of jaundice at Charity Hospital of Louisiana in New Orleans, in which it was found that operations had been performed on two patients who subsequently proved to be suffering from Weil's disease. Further investigation revealed that in the six-year period from June 1939 to June 1945 a total of 23 cases of Weil's disease were diagnosed and treated correctly."

Thus do Heringman and Phillips¹ begin their discussion of this disease which is either increasing in frequency or, much more likely, is being better diagnosed than formerly. It is a spirochetal disease (*L. icterohaemorrhagiae*) and the usual vector is the gray rat. "The majority of cases occur as a result of contamination of the skin by the urinary excretion of infected rats. The organisms can live in a warm damp environment for days and may produce the disease in man by penetration through the nasal mucous membrane, the conjunctivae or abrasions of the skin. The disease is an oc-

1. Heringman, E. Craig, and Phillips, Jack H.: Weil's Disease, New England J. Med. 237: 471, Sept. 1947.

cupational hazard to miners, sewer workers, fish cleaners and tunnel diggers. Rat elimination is the logical method for the control of the disease . . . In New York Weil's disease is now recognized as a compensable disease in fish handlers."

When first stricken the patient suffers from nausea and vomiting, myalgia, prostration and fever and chills. "The second or toxic stage is ushered in with the onset of jaundice. All but one patient in this series became icteric, although world statistics indicated that only half the patients with Weil's disease developed jaundice . . .

"Jaundice develops most frequently between the fourth and eighth days and is rarely accompanied by pruritis. Evidence of renal damage is also found at about this time. The patient appears extremely ill and may become stuporous, with occasional progression into coma or delirium. The temperature drops from the level of 104 to 106 F. seen in the first stages to 100 F. or even to normal. Signs of bronchopneumonia, with blood streaked sputum, may be found. The liver becomes enlarged and tender . . .

"The convalescent stage is reached after the second week in patients who do not succumb. Kidney and liver function improve slowly after that time, the jaundice recedes, and the fever, which may have persisted into the second stage, subsides. During that period the patient complains only of weakness. Convalescence is complete as a rule in about four to six weeks.

"A definite diagnosis can be made in the first week of the disease by examination of the blood under darkfield illumination or intraperitoneal injection of 5 cc. of the patient's blood into a young, preferably pure-white guinea pig weighing 175 gm. or less. In the presence of the disease the young pigs become jaundiced and die in from ten to fourteen days. The spirochetes can then be found in the peritoneal fluid of the animal and in various organs."

The Louisiana observers tell us that "arsenical drugs have no effect on the spirochetes and are dangerous in the presence of liver and kidney damage. Antimony compounds and sulfonamide drugs are also of no benefit.

"Success has been reported in a few cases by treatment with sodium bismuth tartrate.

"The therapy of choice at present is the use of penicillin in large dosage and of immune serum."

And, in conclusion, the authors say, in part, that "acute surgical abdominal disease and extra-hepatic biliary obstruction can both be simulated by Weil's disease, which must therefore be considered in the differential diagnosis."

Despite the great advances that have been made in the last two decades in the diagnosis and treatment of disorders of the liver, it is probable that, among much of the profession, the possibility of Weil's disease is seldom thought of. The New Orleans clinicians are indeed upon firm ground when they assert that "it is entirely possible that a number of patients in Charity Hospital of Louisiana died in the early stages of the disease before the diagnosis had been suspected, which may account for the relatively low mortality figure of this group." Despite the many gaps in our knowledge of Weil's disease, it is all too evident that it is a disease the diagnosis of which is missed altogether too frequently. Heringman and Phillips have done well to report on this state of affairs and it is to be hoped that practitioners will heed their sound admonitions.

ALABAMA OBSTETRICS

A major portion of maternal deaths in Alabama occur in hospitals. Contrary to Mark Twain's observation that "a bed is a most dangerous place because most folks die there," hospital delivery is not more dangerous than home delivery. The joker of reality is that most complicated and dangerous maternity cases are hospitalized sooner or later. Our Alabama hospitals and their staffs are able to save most such cases even though the time for "interference with nature" may have long passed the safety mark. Just any hospital physician is not the proper attendant for such complicated cases. The American College of Surgeons demands suitable consultation before performance of major operative obstetrics. Many American College of Surgeon's approved Alabama hospitals do not enforce this consultation rule. It is an unexplained paradox that many general practitioners and general surgeons will attempt major hospital operative obstetrics with no qualms

of conscience. It is also a mystery why many of our hospitals allow this practice to continue.

The indiscriminate use of pituitrin still continues. As this drug is now used, its hospital use before delivery is most questionable and its home use before delivery is usually inexcusable.

Avoidance of predelivery pituitrin at home, early hospitalization of major obstetric complications, and competent professional assistance with major obstetric operations will still further reduce our improving maternal mortality rates in Alabama.

A TRIP TO LATIN AMERICA

The New Orleans Graduate Medical Assembly is sponsoring an interesting visit to Latin America, planned to follow the 1948 Assembly meeting. On Saturday, February 28, a party composed of doctors and their wives will leave by Pan American Clipper for Merida, Yucatan. After a four-day visit they will fly to Guatemala City, Guatemala. While in Merida many places of medical and historical interest will be visited, including some of the best preserved ruins of the Mayan empire and civilization.

Following these delightful days of companionship and sightseeing, a medical program will be presented in Guatemala City. The sightseeing schedule will then continue in various directions from Guatemala City, the last day and a half of the trip being unscheduled to permit additional side trips or entertainment in the city as may be desired.

Departure from New Orleans will be on Saturday, February 28, and the group will return on Friday, March 12.

Details and a complete itinerary are available at the office of the Assembly, Room 105, 1430 Tulane Avenue, New Orleans.

APPOINTMENT OF COMMISSIONED OFFICERS IN THE MEDICAL CORPS AND DENTAL CORPS OF THE REGULAR NAVY

The statutory authority contained in Public Law 365, 80th Congress, Title II (Army-Navy-Public Health Service Medical Officer Procurement Act of 1947) makes it possible now for civilian doctors to become commissioned officers in the regular Navy, provided they meet the professional and physical qualifications. This law is unique in that

it does away with, for the first time, the age limitation of thirty-two years of age and permits doctors in civilian practice to enter the Navy and be commissioned with the rank up to and including Captain. The law considers all strata of the medical profession, internes, residents, reserves, former medical officers who have resigned, and present practicing physicians.

In order to make application a doctor must be a citizen of the United States, a graduate from a 'Class "A" medical school and have served at least one year's internship in an approved hospital. Candidates will then be judged on a number of qualifications, such as being a member of a specialty board, his teaching connections, the number of years of professional or scientific practice, hospital or laboratory connections, a statement of military service, etc.

The allocation of rank to successful candidates will depend upon their academic age, professional standing, and experience in the medical field. Successful candidates will then be integrated in line with medical officers of the regular Navy and assigned running mates accordingly. This means that they will be eligible for promotion along with their fellow officers of equal rank.

This law offers a fine opportunity for civilian doctors to make a career in the regular Navy and to enjoy its professional advantages as well as its retirement benefits. Doctors interested in such a career should write to the Bureau of Naval Personnel, via the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

INTERNATIONAL SURGICAL ASSEMBLY

The Sixth International Assembly of the International College of Surgeons will be held in Rome, Italy, at the invitation of the Italian Government, during the week of May 16-23, 1948, under the presidency of Professors Raffaele Bastianelli and Raffaele Paolucci of Rome, and Mario Dogliotti of Turin. The Secretary of the Assembly is Prof. Giuseppe Bendandi of Rome. Attendance is not limited to the membership of the College: all surgeons in good standing in their medical organizations are invited. Scientific meetings, scientific and commercial exhibits, visits to the Universities of Turin and Milan have been arranged, to-

gether with tours to other medical centers in Europe. A special exhibit of ancient texts on surgery is being arranged by Prof. Davide Giordano of Venice, Honorary President, under the active presidency of Prof. Adalberto Pazzini, Professor of History at the University of Rome. This extraordinary exhibit dealing with ancient surgery will be on display in the Vallicelliana Library in one of the historical buildings of the Vatican. Detailed information may be obtained from Dr. Max Thorek, General Secretary, 850 Irving Park Road, Chicago 13. For travel information, address the All Nations Travel Bureau, 38 S. Dearborn Street, Chicago, the official travel representatives for this Assembly. Those desiring to present scientific papers address Dr. Karl Meyer, Cook County Hospital, Chicago; Dr. Henry W. Meyerding, Mayo Foundation, Rochester, Minnesota; or Dr. Herbert Acuff, Acuff Clinic, 514 W. Church Street, Knoxville, Tennessee. Those from Canada should direct their inquiries to Dr. Lyon Appleby, 925 W. Georgia Street, Vancouver, B. C.

AMERICAN ACADEMY OF GENERAL PRACTICE

Members in forty-two states, the District of Columbia and Hawaii have been enrolled in the newly formed American Academy of General Practice, according to Dr. Paul A. Davis, Akron, Ohio, president of the Academy. Applications are being received at the rate of nearly 100 a week at the headquarters of the national association of general practitioners of medicine and surgery, temporarily located at 20 North Wacker Drive, Chicago 6, Illinois. Mac F. Cahal, executive secretary of the American College of Radiology, is serving as general counsel and acting executive secretary of the Academy of General Practice.

Doctor Davis, president, was last year chairman of the Section on General Practice of the American Medical Association. Other officers of the Academy are: Dr. E. C. Dexter, Detroit, vice-president; Dr. U. R. Bryner, Salt Lake City, treasurer; Dr. Stanley R. Truman, Oakland, California, secretary.

The American Academy of General Practice was founded June 10, 1947, in Atlantic City, by a group of men who believed that organized effort would best assure the preservation of the general practitioner as

the foundation stone of the finest medical system the world has ever known. Numerous small groups of general practitioners throughout the country had organized, but general practice on a national scale had no voice. Therefore, the members and officers of the Section of General Practice of the American Medical Association, meeting out of official session at the San Francisco meeting in 1946, set in motion the machinery that culminated in the founding of the American Academy of General Practice at the 1947 convention at Atlantic City and into which all local groups have been united.

The Academy has no official connection with the American Medical Association except that members must be members of the American Medical Association. The Academy plans to support and cooperate with the A. M. A. in its high ideals and will also support every other group whose aims are unselfish and for the best interests of the public health.

The purposes of the Academy, as set forth in its constitution are:

1. To promote and maintain high standards of the general practice of medicine and surgery.
2. To encourage and assist young men and women in preparing, qualifying, and establishing themselves in general practice.
3. To preserve the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience.
4. To assist in providing postgraduate study courses for general practitioners, and to encourage and assist practicing physicians in participating in such training.
5. To advance medical science and private and public health.

To be eligible for membership a physician must be engaged in general practice. He must be duly licensed in the state in which he practices, and must be of high moral and professional character. He must have had at least one year of rotating internship at an approved hospital, or the equivalent in postgraduate training. He must have been in general practice for at least three years. (Special consideration is being given by the Membership Committee to military service.) He must have shown interest in continuing his medical advancement by engaging in postgraduate educational activities.

Since its inception the progress in organization has been remarkable. After only three months the membership is larger than all but the two or three largest specialty groups. By stimulating postgraduate study and establishing a standard of quality toward which all conscientious general practitioners will strive, the Academy will promote progress in general practice in much the same way the specialty societies have promoted progress among specialists.

"It seems obvious," said Mr. Cahal, "that high standards and progress among the family doctors, who render at least 85% of the medical care furnished in America, is the most important single goal for the medical profession today. Through the organization of the American Academy of General Practice the means for achieving that goal has been provided."

THE WOMAN'S AUXILIARY

A RESOLUTION

WHEREAS, The Divine Creator has called to her reward one of our beloved members, Ruth Denison, and

WHEREAS, This member has contributed much to the advancement of the Medical Auxiliary Work and the progress of this Auxiliary, and

WHEREAS, Her passing leaves a void in the lives of each of the members, therefore be it

RESOLVED, That our feeling of deep grief and loss be made a part of the permanent record of the Auxiliary and a copy of this resolution be sent to the husband, Doctor George A. Denison and son, and Doctor D. L. Cannon for publication in the State Medical Journal, and our Secretary, Mrs. T. E. Dilworth.

Mrs. J. R. Chandler
Mrs. R. E. Tyler
Mrs. Dan J. Coyle
Mrs. Albert E. Casey
Mrs. William J. Rosser, Chairman

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE COMMITTEE ON MEDICAL CARE AND PUBLIC RELATIONS

Douglas L. Cannon, M. D.

Member of the Committee

The Committee on Medical Care and Public Relations has a dual responsibility: to promote for the Association and under its direction a public relations program; and to sponsor acceptable medical care plans. In the second of these, the Committee has progressed far, though there is much remaining to be done. In public relations, however, a ground-work has hardly been laid and it is this phase of our obligation that I wish to refer to specifically.

Sir William Osler said, "It is no idle challenge which we physicians throw out to the world when we claim that our mission is of the highest and noblest kind, not alone in curing disease but in educating the people in the laws of health." It cannot be denied that we have striven valiantly to alleviate human suffering but we cannot be so positive in claiming that we have spared no opportunity to tell our patients many of the things they need and are anxious to know.

In this I do not refer solely to the restricted physician-patient relationship but more widely to the numerous factors that have a part in determining the attitudes of people in general to the profession as a whole. In this connection two pertinent questions may be asked. Has the profession sold itself to the public? Will the public fight for the profession in time of crisis? I believe it is because we are doubtful about the answers to these queries that this Committee was created and given a specific job to do, namely, as stated by President Grote in his message to the Association in April, "to keep the public on our side." I do not need to tell you that the world is in a terrible mess. The general tenor seems to point toward a coronation in the morning and a crucifixion in the evening, the same subject playing the leading role in both events. I have a concern lest our profession be that one.

In its Report on Public Relations to the Colorado State Medical Society, Raymond Rich Associates of New York City said, "A public relations program must take into account not only community reactions to the medical profession but also points of view

current within the profession itself." "On the part of several of the first doctors interviewed," continued the report, "there was discovered a tendency to minimize the extent of lay dissatisfactions with the practice of medicine . . . As a matter of fact it seems safe to say that many, who accept in theory the need for augmented public relations activity, still are not ready to grant the full extent of the problem with which this activity must cope."

It may be then that one of our first duties is to see that every member of the profession in Alabama appreciates fully what lies ahead of it unless there is unity of thought and action. The Medical Society of the State of Pennsylvania must share a similar view regarding the situation as it relates to its members for this is the opinion it has expressed: "The newspaper, the radio, the motion picture, the poster, and the booklet are being used in our public relations program. However, they are only the tools . . . only the mechanical channels for reaching the public. They are important but the atti-

tude and ability of every doctor in our society actually constitute the basis of public opinion. Every time you look at yourself in the mirror, you see the man who can do the best public relations job for you and your profession. Our public relations cannot be successfully promoted by any one individual or by any group hired to develop this program. This undertaking is a project in which each must do his part, working as a team to inform the people of our desire to be of service to them. There must be no vain hope that a public relations program will be a cover for shortcomings or a substitute for good works, but rather the hope that the straightforward presentation of our service to the public will enlist their support of our activities." And, in my opinion, that goes for Alabama too.

In time there will be a gradual unfolding of the multiplicity of items that must claim our attention. It must be sufficient right now for us to pledge our best efforts toward the solution of all the problems they present.

MEDICAL COLLEGE OF ALABAMA

CLINICOPATHOLOGICAL CONFERENCE

Reported by

Roger D. Baker, M. D.
Professor of Pathology

Conducted by

James S. McLester, M. D.
Associate Professor of Medicine

PRESENTATION OF CASE

Dr. Stanley S. Kahn, Junior Resident in Medicine: A 42-year-old colored woman was admitted to Hillman Hospital on June 11, 1947 complaining of vaginal discharge and lower abdominal pain for eight years. Physical examination revealed no abnormalities save for cystocele, rectocele, cervical erosion and lower abdominal tenderness. A vaginal hysterectomy and plastic vaginal repair were performed. She received one blood transfusion of 500 cc. preoperatively, another of 500 cc. during the operation, as well as 500 cc. of plasma during the operation. The postoperative course was uneventful, and the patient was discharged on the fourteenth hospital day.

She was readmitted to Hillman Hospital on September 10, 1947, complaining of deeply colored urine of four weeks' duration and

white-colored stool, anorexia, nausea, vomiting and yellow discoloration of the eyes of three weeks' duration. No history of antiluetic treatment, treatment for rheumatism, exposure to rats, nor history suggestive of cholecystitis or cholelithiasis could be obtained. The past history was noncontributory, except for a vague history of exertional dyspnea. On examination the abnormalities were an intense yellow discoloration of the sclerae, mucous membranes and skin, a palpable liver extending three centimeters below the right costal margin with a smooth, non-tender edge, temperature of 99.6°F., and pulse rate of 108. Laboratory examinations on admission and subsequently during the hospital course revealed a moderate anemia, red cell sickling of 98 per cent, a mild leukopenia, normal urinalyses, except for the presence of bile, and severe liver damage

as evidenced by icterus indices ranging between 52 and 111, positive direct van den Bergh test and indirect van den Bergh reaction ranging between 7.5 and 10.0 units of bilirubin, two to three plus cephalin flocculation tests, an alkaline phosphatase of 10.1 units and a reversal of the albumin-globulin ratio, as well as an abnormally low nonprotein nitrogen of 19 mg. per 100 ml. of blood. Her urine urobilinogen ranged between 1 to 10 and 1 to 20 dilutions. An x-ray scout film of the abdomen revealed no opacities suggestive of calculi.

The patient was placed on a high protein, high carbohydrate, low fat diet, and supplementary large doses of parenteral vitamins and liver extract. On September 22nd she became stuporous and disoriented and then comatose. On the twentieth hospital day, the patient's temperature which had been normal throughout her illness, save for the slight elevation on admission, suddenly rose to 105°F., and she died.

CLINICAL DISCUSSION

Dr. McLester: We can boil this story down rather narrowly. There were two admissions because of two apparently unrelated diseases. But were all of the events entirely unrelated? I don't think so.

On the first admission there were:

Dyspnea on exertion

Pelvic inflammation

Hysterectomy

Marked loss of weight

Transfusion

This patient apparently had pelvic inflammatory disease, tenderness in the lower abdomen with a vaginal discharge, and because of this her uterus was removed. She had lost 25 pounds in weight before that. She was given transfusions of whole blood and plasma and was then dismissed from the hospital apparently well.

Three months later she returned jaundiced and obviously ill. Significance can be attached to the persistency of her vomiting, the enlarged, tender liver with laboratory evidences of liver damage, the reversal of the albumin-globulin ratio in her plasma, and the continued weight loss. When to this is added the stupor and coma and then death twelve days after admission it all points directly, I believe, to hepatic insufficiency. Before proceeding further upon

this assumption, however, two questions must be answered.

Did her long history of dyspnea on exertion (three pillows at night!) point to cardiac failure? No; the heart was not enlarged and in other respects also appeared normal. I am unable to explain her dyspnea but cannot incriminate the heart. Uremia will give a somewhat similar picture. Was this the cause of death? No; there was no evidence of kidney damage; the urine was normal with a normal specific gravity, and the nonprotein nitrogen was not increased.

Assuming that she died of hepatic insufficiency, which means that the liver was so badly damaged that it was unable to do its work, what was the nature of this damage? Did the sickleemia have anything to do with it? In the crises of this disease thromboses are very common. Could this alone have damaged the liver?

Dr. A. Bankston Riser, Chief Resident in Medicine: I don't believe that sickleemia would so affect the liver. The thromboses of this disease are more often peripheral.

Dr. McLester: I agree with you. The circulation in the liver is too good. I am satisfied that the sickleemia had nothing to do with it. Everything points to hepatitis, either infective hepatitis or homologous serum hepatitis. Dr. Riser, what was your impression at the bedside?

Dr. Riser: It was our impression that she had an acute hepatitis. In the Mediterranean and in Italy we recognized hepatitis by a cigaret test. Cigaretts taste very bad in hepatitis. We would pass cigarettes around and in those to whom cigarettes no longer tasted good we called it acute hepatitis.

Dr. McLester: Yes, I think it fair to assume that in the beginning of her second illness this patient had acute hepatitis and that this disease, instead of pursuing a benign course, as it usually does, followed an opposite course and finally led to subacute yellow atrophy. This is what happens when the damage to the liver is overwhelming. I believe Dr. Baker's going to show us numerous areas of extensive necrosis.

Student: Did she have Weil's disease?

Dr. Kahn: Patients with Weil's disease have considerable fever and evidences of renal insufficiency, none of which she had.

Dr. McLester: What was the origin of her hepatitis? Did it bear any relation to her

earlier illness? Infective hepatitis is distressingly frequent, as is homologous serum jaundice. The two present certain distinguishing characteristics, notably the length of the incubation period, but there is much to indicate that they are one and the same disease and that the differences seen are due merely to a change which the virus has undergone in its passage through the human host. This patient may have had a primary infective hepatitis but when we consider her earlier transfusion and the administration of plasma it is tempting to say that she had homologous serum hepatitis. Necrosis was so extensive that the usual repair was impossible, and subacute yellow atrophy followed. I would, therefore, make the following:

CLINICAL DIAGNOSIS

Hepatitis
Extensive necrosis of liver of the yellow atrophy type
Subacute yellow atrophy
Hepatic insufficiency
Death

PATHOLOGICAL DISCUSSION

Dr. Baker: This case has great importance in the practice of medicine, for it illustrates, I believe, an untoward effect of the therapeutic use of blood plasma.

At autopsy jaundice was extreme. The liver weighed 910 grams, only three-fourths of the normal weight. It was smooth and had, on the cut surface, yellowish-green remnants of hepatic tissue alternating with red areas devoid of hepatic cells. The appearances were those of subacute red atrophy of the liver and suggested that necrosis of much of the liver had occurred several weeks previously. The bile ducts were free of stones. The spleen was enlarged and firm, a characteristic often present in sicklelema. The lungs were congested and there was subacute bronchitis as indicated by redness of the bronchial mucosa. There was mild chronic cystitis. The brain showed no lesions. The heart was slightly heavier than normal.

The study of many microscopic sections confirmed most of the gross impressions.

ANATOMICAL DIAGNOSIS

Subacute red atrophy of liver
Homologous serum jaundice
Subacute bronchitis

Minimal lobular pneumonia
Chronic cystitis
Sicklelema

The subacute red atrophy of the liver is merely a later phase of acute yellow atrophy. I am using the precise anatomical designation which indicates the phase of the disease. According to this plan, there is acute yellow atrophy of the liver when the patient dies soon after the onset of symptoms. The liver is yellow because of the bile-staining of the necrotic liver cells. There is subacute red atrophy when the patient dies a longer period after the onset of symptoms. The liver is red in many areas because the necrotic hepatic cells have been removed by dissolution and phagocytosis leaving only the vascular framework of the liver, which has a red appearance. A third stage is defined, that of chronic gray atrophy, when the patient dies much later and the liver presents gray fibrotic areas of scar or collapsed liver tissue, a stage of cirrhosis. In postmortem experience I have seen more cases of subacute red atrophy than of acute yellow atrophy. It is customary, in many presentations of the subject, to group all stages of this massive necrosis of the liver and its sequelae under the heading of acute yellow atrophy. This has been done in Cecil's "Textbook of Medicine," Sixth Edition, page 757.

Subacute red atrophy, or acute yellow atrophy if you prefer, has been recognized for decades, and has been ascribed to chemical poisons, to infections such as syphilis or to the toxins of bacterial diseases. Arsphenamine was thought to be a causative factor at times.

During World War II many cases were reported in Army personnel who had had epidemic hepatitis. (See Lucke, B.: The Pathology of Fatal Epidemic Hepatitis, *Am. J. Path.* 20, 471-620, 1944.) Finally, attention is being called to cases of acute yellow and subacute red atrophy of the liver in those who have received transfusions. (Scheinberg, H.; Kinney, T. D., and Jane-way, C. A.: Homologous Serum Jaundice. A Problem in the Operation of Blood Banks, *J. A. M. A.* 134, 841-848 (July 5) 1947.) The fatal cases present hepatic lesions which are apparently indistinguishable from those associated with epidemic hepatitis, and also indistinguishable from those of many of the

older cases of acute and subacute hepatic atrophy of unknown cause.

The available evidence indicates that the agent producing hepatic necrosis, in both infectious hepatitis and homologous serum jaundice, is a virus. Thus a probable viral cause of acute yellow atrophy has come to be recognized in the past few years.

According to Scheinberg et al. (referred to above): "Homologous serum jaundice is a form of acute hepatitis which follows the receipt of human blood, plasma or some of its derivatives after an interval of forty to one hundred and eighty days."

In our case the patient received transfusions of both blood and plasma. The time interval from the transfusions to death was approximately 90 days, from transfusions to first symptoms 61 days, and from transfusions to onset of jaundice 75 days. Therefore, it seems logical to conclude that the disease in this case was homologous serum hepatitis, since the time intervals fitted and since there was no history of antiluetic therapy or other factor commonly productive of hepatic necrosis.

A careful epidemiologic study of homologous serum jaundice has been made recently. (Brightman, I. J., and Korn, R. F.: Homologous Serum Jaundice in Recipients of Blood Plasma, *J. A. M. A.* 135, 268-272, 1947.) The author's criterion for the diagnosis of homologous serum jaundice was "a bed-confining illness associated with clinical manifestations of acute hepatitis including jaundice, not accounted for by other recognized pathologic conditions and occurring between one and six months after transfusion."

These authors attributed twelve deaths to homologous serum jaundice in Upstate New York during a seven month period. Moreover, their follow-up of 649 patients who received transfusions with dried pooled plasma revealed a subsequent incidence of homologous serum jaundice in 4.5%. Think of the importance of this problem throughout the country as a whole! They advise that plasma, as well as other forms of transfusion therapy, should be administered only when the clinical indications are absolute, so that the benefits to be derived clearly outweigh the risk of contracting homologous serum jaundice.

Dr. Davis has gone through our postmortem records of the last three years to see how many of the cases of acute yellow atrophy of the liver, including, of course, subacute red atrophy, might have been cases of homologous serum hepatitis.

Dr. Harwell Davis, II, Instructor in Pathology: We have had four previous cases in which the gross and microscopic findings were about the same as in this case. Of these, one was a child of four years who had had no transfusions of plasma or whole blood and died six months after the first admission. This could not be attributed to homologous serum hepatitis. The second case was that of a colored female who likewise had had no sort of transfusion but had received arsphenamine therapy prior to onset of symptoms. This case then is probably an arsphenamine reaction rather than serum hepatitis. The remaining two cases both have a history of receiving commercial pooled plasma between three and five months prior to onset of hepatitis. It is likely that these cases represent homologous serum hepatitis. In summary we have seen five cases in a series of over 800 autopsies, three of which may be considered homologous serum hepatitis.

Dr. J. F. A. McManus, Assistant Professor of Pathology: There are publications suggesting that whole blood is preferable to pooled plasma because of less likelihood of an infectious agent being introduced into the recipient. If you transfuse with whole blood the odds are less.

Dr. Baker: I am glad you mentioned this. There seems to be much greater risk in the use of pooled plasma. Scheinberg et al. (cited above) suggest the possibility of elimination of the practice of pooling plasma or reduction of the size of pools to a minimum, with limitation of the number of recipients of plasma from each pool as far as possible.

The toxicity of streptomycin now appears to be sufficiently great to deny use of the drug to those patients who are making satisfactory progress under conventional forms of treatment. At present, most experienced physicians prefer to reserve the limited supply for patients more acutely ill, and especially for those in whom the disease has been progressive during recent months, and no other treatment is likely to be effective.—H. McLeod Riggins, M. D., and H. Corwin Hinshaw, M. D., *Am. Rev. Tuberc.* Aug. 1947.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

THE INFLUENZA DANGER

Some months after V-J Day, Alabama's State Health Officer received a letter from Dr. Edgar G. Greene, Chairman of the Fourth Corps Area for Procurement and Assignment Service for Physicians. It expressed appreciation of the services of Alabama physicians and others who, during the trying months of the war, had maintained the delicate balance between civilian needs and the demands of the armed services. Thanks to that delicately maintained balance, he wrote, "no nation had a better medical service for its fighting men." Thanks also to it, "our people came victoriously through the trying ordeal without serious damage and no major epidemics."

Physicians, public health workers and others who read Dr. Greene's letter shared his pleasure. But there was a feeling of only restrained satisfaction, for many of them remembered the epidemics that followed the first World War and determined not to become too well pleased about the country's health conditions until sufficient time had passed to be sure that the danger of delayed outbreaks born of war conditions was safely passed.

The war has now been over considerably more than two years, and still there has been no repetition of the influenza epidemic of 1918-19. There have been many cases of course, and in some communities they have been sufficiently concentrated to constitute local epidemics. Indeed in some areas cases have been reported in such large numbers that conditions approaching a statewide epidemic have occurred. But, I repeat, anything even remotely suggesting the influenza epidemic that swept the country, and indeed much of the civilized world, during the final weeks of the first World War and for sometime thereafter has been happily averted.

This does not mean, however, that medical science has taken influenza's measure.

Should conditions again become sufficiently favorable, there is every reason to believe—and fear—that this disease would again ride with the Four Horsemen. And, even if we continue our present relatively good fortune, we shall continue to have with us the problem of individual cases. That problem becomes markedly more serious about this time of the year, when all of the respiratory diseases begin attacking many more people than at any other time.

A Yale University medical authority recently took a somewhat more optimistic view of the influenza epidemic outlook than the present writer. Dr. Francis G. Blake, Sterling Professor of Medicine at the institution's School of Medicine, expressed the opinion that it was possible to vaccinate the entire population of the United States so successfully that another disastrous outbreak would be effectively prevented.

However, while some tests of influenza vaccine have been successful, some have not, Dr. Blake said in telling of the work of medical scientists during the last several years. What he called "a considerable degree of success" in the mastery of this "difficult and complex problem of preventive medicine" was reported. At the same time, he called attention to several different strains of virus which cause this disease. To be really effective, he explained, a vaccine must be capable of dealing with each of these strains.

The Yale faculty member pointed out that the first influenza virus to be isolated and identified was responsible for what are now known as Influenza A and Influenza B. In 1943, he added, progress in their prevention had apparently been so great that experiments were set up to determine the effectiveness of the vaccines produced up to that time. The tests were conducted in nine university communities.

These tests, which were carried on in areas where influenza was especially prevalent, showed that the use of the newly developed vaccines reduced Influenza A and Influenza B prevalence as much as 70 per cent, or even more. The basis of this reduction, the

speaker told his audience, was a comparison of influenza incidence (involving these two types only) among those who had been vaccinated and among those who had not been.

"On the basis of accumulated epidemiological experience, it was expected that an epidemic of Influenza A might occur in the late fall or early winter of 1946 and 1947, and consequently a number of large-scale vaccination programs were instituted in several educational institutions and industrial companies," the speaker said.

The results, unfortunately, were not uniformly good, however. Dr. Blake attributed this relative failure to a lack of similarity between the virus strains used in preparing the vaccine and those that were responsible for the largest number of cases. As a result, he said, influenza outbreaks occurred in a number of places "without any satisfactory evidence to show whether vaccination reduced the incidence or not." He added:

"It has become quite obvious that, despite the not inconsiderable success that has attended the work of the last five years, many important practical questions still require study and solution before a universally effective vaccine is at hand."

As encouraging as progress in influenza immunization has been, the State Department of Health believes it is still too much to hope that the immediate future will bring anything like population-wide immunity to this disease. It remains, therefore, the personal responsibility of every one of us to protect himself against it by his own efforts.

Like the viruses responsible for the all-too-common cold, influenza viruses are present in the discharges from the nose and mouth of the influenza victim. Again like cold viruses, they are scattered over a wide area when such a person coughs or sneezes without placing a handkerchief, gauze or other protective covering over his face. Some of those viruses, in the form of minutely small droplets, drift to the ground or floor, while others may remain suspended in the air until someone breathes that air. Even those that drop to the pavement or floor before someone comes within range may not necessarily be harmless, because, unfortunately, they do not die quickly, and, if struck by a passing shoe or piece of furniture, may be hurled again into the air, as powerful and dangerous as ever. Either of

the two groups mentioned may become attached to silverware, mirrors, furniture and other objects and be transferred, either directly, when such objects are placed in the mouth, or indirectly through the hands, to others. Fortunately, medical opinion is disinclined to regard liquids, such as water and milk, as more than insignificant factors, if even that important, in the mechanical transfer of these dangerous etiologic agents.

Unlike certain other forms of illness which require several days to develop after infection occurs, influenza usually begins showing symptoms in about 24 hours, although in some cases they do not appear until 72 hours after the viruses enter the body. At first its symptoms usually are similar to those of a cold, but whatever optimistic conclusion the victim may reach about his condition is shortlived, because it soon becomes plainly evident that something more serious has him in its grip. He begins coughing, often uncontrollably. The nose runs, as it sometimes does, and sometimes does not, when one has only a cold. There is a sharp increase in body temperature in practically all cases, which does not usually occur in a cold. The victim begins feeling severe pains and soreness in the head, limbs and back, and these usually last a week or more. There is an overwhelming sense of physical exhaustion not unlike that which follows a long-drawn-out enervating illness. One person who had influenza after recovering from pulmonary tuberculosis had some positive views on this: He said he had much more "pep" and could exert himself much better after 20 months in a tuberculosis sanatorium than after a ten-day bout with influenza. He made the same remark that many other influenza victims and ex-victims have made—that this feeling of exhaustion lasts for a considerable time after other symptoms have disappeared and the patient has returned to work.

Like the cold, influenza is much more infectious in the early, or beginning, stage than at any other time. That adds greatly to the problem of preventing, or at least limiting, its spread. For, remember, it is while the disease is just beginning that it is most likely to be mistaken for a cold or some other relatively harmless form of illness. It is then that the victim is least likely to go to much trouble to protect others against his

infection. It is then that others are likely to take few, if any, measures to protect themselves. It is then—not after his case has been properly diagnosed and he has been put to bed—that he stays on the job and associates with his fellow-employees, working next to them in stores, offices and many other places, eating in the same cafeterias during the lunch hour and breathing into other people's faces on crowded buses and street cars.

Under ideal conditions, a worker would be sent home, or told to stay at home, as soon as he developed any of the symptoms of influenza, and remain in bed, away from other people, until they departed. In actual practice, however, with work to be performed and responsibilities to be discharged, about the best that can be done in the way of protecting the general public—you and me and some 3,000,000 other Alabamians—is to develop and maintain an alert influenza-consciousness during the "influenza season" and stay as far as possible from those who are coughing and sneezing. In view of the realistic fact that, in spite of our best efforts, we cannot be entirely safe from infection. That means keeping our general health at the highest level possible. To that end, we should get as much exercise as we can out in the open air and sunshine. It means sleeping in well ventilated, but not drafty, rooms. It means eating well balanced meals. It means drinking more water than usual. It means spending more time than usual in that well ventilated bedroom, asleep. It means wearing the correct amount of clothing to keep comfortable indoors and outdoors—fairly light garments for all day long, with overcoats and other wraps for the blustery out-of-doors.

Four hundred and ten Alabamians succumbed to influenza in 1946, these deaths having been divided almost equally between the white and colored population. That was an average considerably in excess of one influenza death a day. As these deaths, like the disease itself, are largely seasonal, there is no doubt that they occurred at the rate of several a day during the height of their cold-weather peak. Whether the 1948 incidence and mortality are to be greater or less than those for 1946 depends, in the main, not upon wholesale immunization campaigns, but upon the determined willingness

of all of us to do a little more than he has done before to protect himself and others from the disease.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

DECEMBER 1947

Examination for diphtheria bacilli and Vincent's	402
Agglutination tests (typhoid, Brill's and undulant fever)	665
Typhoid cultures (blood, feces and urine)	329
Examinations for malaria	352
Examinations for intestinal parasites	3,261
Serologic tests for syphilis (blood and spinal fluid)	20,703
Darkfield examinations	41
Examinations for gonococci	2,284
Examinations for tubercle bacilli	2,019
Examinations for meningococci	2
Examinations for Negri bodies (microscopic)	100
Water examinations	1,092
Milk and dairy products examinations	2,510
Miscellaneous	408
Total	34,385

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1947

	Oct.	Nov.	E.E.* Nov.
Typhoid	3	1	10
Typhus	13	7	37
Malaria	181	82	192
Smallpox	0	0	0
Measles	9	25	38
Scarlet fever	50	74	128
Whooping cough	61	126	67
Diphtheria	58	70	116
Influenza	74	271	213
Mumps	8	15	37
Poliomyelitis	7	0	4
Encephalitis	1	0	1
Chickenpox	10	19	70
Tetanus	3	6	4
Tuberculosis	227	256	207
Pellagra	4	2	1
Meningitis	6	6	8
Pneumonia	77	125	224
Syphilis	3102	2433	1315
Chancroid	39	18	11
Gonorrhea	859	719	461
Tularemia	0	4	0
Undulant fever	6	3	4
Amebic dysentery	2	0	0
Cancer	304	201	0
Rabies—Human cases	0	0	0
Positive animal heads	37	17	0

—As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND
DEATHS FROM CERTAIN IMPORTANT CAUSES
FOR SEPTEMBER 1947 AND COMPARATIVE RATES
FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During Sept. 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	7722	**	**	31.3	30.3	25.1
Stillbirths	219	**	**	27.6	28.9	30.4
Deaths, exclusive of stillbirths	1947	1139	808	7.9	7.3	7.4
Infant deaths:						
Under one year	242	131	111	31.3	36.0	42.6
Under one month	189	105	84	24.5	27.2	27.4
Typhoid and paratyphoid 1, 2					0.4	1.2
Epidemic cerebrospinal meningitis 6	2	2		0.8		0.4
Whooping cough 9	4	2	2	1.6	1.6	0.8
Diphtheria 10	3	2	1	1.2	1.2	1.6
Tuberculosis, all forms 13-22	85	37	48	34.4	32.4	32.3
Malaria 28	1		1	0.4	2.0	2.5
Syphilis 30	18	8	10	7.3	6.1	10.6
Influenza 33	6	3	3	2.4	2.0	2.5
Measles 35	1	1		0.4		
Poliomyelitis 36	1	1		0.4	2.4	
Encephalitis 37						0.8
Typhus fever 39	2	2		0.8	2.4	2.0
Cancer, all forms 45-55	179	131	48	72.5	70.9	70.0
Diabetes mellitus 61	22	12	10	8.9	10.9	9.4
Pellagra 69	6	4	2	2.4	2.8	3.3
Alcoholism 77	2	2	0	0.8	1.6	1.6
Intracranial lesions 83	193	106	87	78.2	67.7	72.4
Diseases of the heart 90-95	438	280	158	177.5	140.2	144.9
Disease of the arteries 96-99	31	22	9	12.6	11.8	5.3
Bronchitis 106	4	3	1	1.6	1.2	0.4
Pneumonia, all forms 107-109	52	34	18	21.1	28.8	21.7
Diarrhea and enteritis (under 2 years) 119	7	3	4	2.8	1.2	15.1
Diarrhea and enteritis (2 and over) 120	6	3	3	2.4	1.2	4.5
Appendicitis 121	8	4	4	3.2	6.1	5.7
Hernia and intestinal obstruction 122	23	12	11	9.3	6.9	3.7
Cirrhosis of the liver 124	17	9	8	6.9	6.1	4.5
Nephritis, all forms 130-132	144	76	68	58.4	53.5	54.8
Disease of puerperal state 140-150	23	13	10	29.0	19.5	22.1
Puerperal septicemia 140, 142a, 147	3	1	2	3.8	5.2	6.3
Suicide 163-164	18	17	1	7.3	6.5	6.5
Homicide 165-168	33	9	24	13.4	14.6	7.4
Accidents, all types 169-195	144	100	44	58.4	50.2	62.6
Motor vehicle accidents 170	55	40	15	22.3	19.9	22.5
All other known causes	337	203	134	136.6	135.0	138.4
Ill defined and unknown causes 199-200	137	38	99	55.5	53.5	51.2

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the September report of the years specified.

**Not available.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

TWENTY YEARS OF ORGANIZED SANITATION WORK IN ALABAMA

Contributed by

R. V. Barnes, M. S. E.

Prin. San. and Pub. Health Eng.

The February 1939 issue of this Journal carried an article by the writer on this subject covering the first ten years of organized work. The historical background of the work prior to 1939 has not changed. Therefore, for lack of better language and arrangement, portions of that article will be quoted.

"Upon the formation of county health departments in Alabama the problem of securing the safe disposal of human wastes for the control of hookworms, typhoid fever, and dysentery presented itself to the health workers. As early as 1920, and before, pit privies were built in some of the organized counties in the state for this purpose. However, the work was not done systematically, but to these workers must go the credit for making a start in the right direction. The type of privy was at that time being continually changed to insure and secure better sanitation. Through the initiative on the part of health workers and a desire for a more permanent construction, the type evolved from wood to concrete slab and riser, and finally the concrete slab with cast iron riser or stool. Yet standardization was not being obtained. The work was done in a sporadic and haphazard manner. In this early sanitation work, which was of greatest value as an educational measure, the health workers were feeling their way in this great field.

"Pit privies were widely adopted as a safe method of disposal of human wastes and found suitable for installation in almost every locality in the state. It was also realized that a standard type of privy and a unified program for the whole state were necessary to reach the desired goal.

"With the rapid growth of county health work the need for coordination became more apparent. A systematic and uniform program which would coordinate the work and produce the maximum result in a minimum period of time had to be designed. In the beginning it was realized that the sanitation work must rest mainly with the county health departments and that, if any failed

to assume leadership in the work, the state would not progress as it should, resulting in one major piece of health work not being accomplished.

"Public health legislation of 1927 gave the State Board of Health the authority to make and adopt plans and specifications for the construction and maintenance of earth pit privies and other forms of sanitation. The act was approved September 9, 1927, as an amendment to Section 1134 of the Code of 1923." (Now Section 73, Title 22, Code of 1940—Editor.)

"Fortified with experience gained in the past, a study was made of the types and methods employed in several states. Many improvements were made in the design of the pit, slab, and cast iron riser, previously used in the state.

"Notable among these improvements is the use of the cast iron riser, a product which has not before or since been used as standard in any other state. Liberal and flexible minimum requirements were adopted on the manufacture of risers which have left the field open to all foundries or concerns wishing to enter. This item alone, which has been commercialized to the extent that a riser may be purchased in most any hardware store in Alabama, has operated to maintain the standard of construction with the minimum participation of health personnel in the installation of each and every structure.

"Coupled with the riser was concrete construction, which gave both simplicity of construction and permanency. Without these items the sanitation program would have collapsed sooner or later. The health department would have become too deeply involved administratively. The responsibility for providing sanitation could not have been assumed by the proper authorities, thus leaving the avenue open for relieving the health workers of this problem.

"Rules and regulations and plans and specifications, in reference to pit privies, having the force and effect of law were drawn up, approved and adopted by the State Board of Health, as provided for in Section 1134, on January 9, 1928.

"After the model ordinance and other forms were prepared and an adequate organization built up, the program was set on its course early in 1928. As with all new

movements, many difficulties were encountered. Economic, physical, political and legal difficulties were constantly present but were in a great measure overcome by patience, energy and determination."

The program has passed through four major phases or eras during the twenty years following 1927. Each, by its developments, has pointed the way for future activity and has provided stepping stones by which the ultimate goal might be obtained.

"The first phase was that of law enforcement with an impetus given the work by the use of police power delegated to the health departments by municipal and county authorities. The purpose of this program was attained in the mass construction obtained and the resulting enlightenment of the public.

"The economic depression which followed this era gave birth to a new approach to the problem. Existing health personnel cooperated with the relief agencies in formulating and executing sanitation projects. Funds made available through the relief agencies to supplement the regular personnel enabled the Bureau of Sanitation to select and place in the field men as project supervisors with basic engineering training. With these men to choose regular personnel from, the beginning of a change in the quality of county sanitation officers was marked.

"With the passage of the Kelly Act by the Legislature in 1935, which gave the municipalities the authority to carry out a complete municipal sanitation program on a self-liquidating basis, another more comprehensive phase of the work was entered. Rather than attempt to delegate one of its powers—police power—to the health department, the municipality was armed with the authority to utilize all its powers to accomplish the job. The simplicity of the program is convincing, and the manner in which municipal authorities have realized and assumed their just responsibilities in regard to providing sanitation for all the people in towns has been gratifying."

The advent of World War II presented many problems not previously anticipated. Shortages of scrap and pig iron required the adoption of supplementary plans for privy construction which did not require the use of the cast iron riser. It so developed that

very few of these privies were constructed, as the contemplated complete exhaustion of cast iron risers did not materialize. The shortages of both materials and labor restricted the amount of sanitation construction. Priorities for materials of construction were required and they were used in a number of the counties. The call to arms of many of the sanitation personnel of the state and county health departments prevented adequate supervision of the work in certain areas and consequently reduced the number of installations completed.

Although a state survey of school sanitation had been accomplished and tentative plans had been made to make extensive improvements, the war caused a complete abandonment of these plans, except in certain war areas where new school building construction was required.

The difficulties and shortages caused by the war were overshadowed to some extent by the use of improved types of sanitation for housing in war areas. The development of sanitation requirements for tourist camps, trailer camps, tent camps and bunk houses may be classified as beneficial results of the war. The regulations, developed for county application, are now being used in several counties.

The desire of returning veterans for improved types of sanitation has given impetus to the work, especially in the rural areas. This, coupled with Rural Electrification Authority developments, has also been the cause for a definite trend toward septic tank construction.

Passing through these eras and surmounting many obstacles, health workers in Alabama have accomplished during the twenty years the installation of 191,869 standard pit privies, septic tanks and sewer connections serving a population of approximately 1,120,000. At the beginning of the program it was estimated, from available records, that at least 627,640 of the state's population were at that time served by connections to existing sewer systems. From these figures it is seen that at the close of 1947 a minimum of 61.7 per cent of the people had the advantage of facilities for the disposal of human wastes in an approved and sanitary manner.

It is seen that about the same progress has been made during the last ten years as was made during the first ten years of organized

work. What will the picture be ten years from now? What will be the picture twenty years from now? The course has been charted. Continued progress is assured. However, the successful conclusion of this program depends upon the diligent and sustained efforts of all interested persons. As the actual work has been and will of necessity have to be accomplished at the county level, much will depend upon the conduct of the program in each individual county.

It has been stated previously in articles appearing in this Journal that no comprehensive and well-rounded program, which will solve the sanitation problem in the rural areas, has been planned and put into operation in any county. We cannot use this statement any longer. During the last session of the Legislature a general act with local application was passed which would grant county officials, in all counties with a population of 400,000 or more, powers similar to those given to the municipal authorities by the 1935 Legislature under an act known as the "Kelly Act." The act was approved September 25, 1947. At the present time, it is seen that Jefferson County is the only one to which the act applies. Jefferson County health workers have won the distinction of being the first group in Alabama and, so far as known, also the first in the nation to make adequate plans and lay the proper foundations for securing sanitation for all homes in that county. This should be a challenge to all other county health personnel.

Undulant Fever—Symptoms of the acute type of undulant fever are: intermittent undulatory fever, drenching sweats, chills, headache, backache, muscular and joint pains, weakness, loss of weight, possibly a palpable spleen, an infrequent skin eruption, leukopenia with lymphocytosis and secondary anemia. The incubation period is five days to one month, and the prodromal symptoms are headache, weakness, loss of appetite and constipation. The evening temperature occasionally goes as high as 107 F. with great restlessness and insomnia. There may be invasion of the central nervous system. Pulmonary lesions are of frequent occurrence, characterized by hilar and peribronchial infiltrations and even patchy pneumonic areas. Vegetative endocarditis may occur. This form may last from a few days to several months, clearing by lysis.

The three cardinal features of chronic undulant fever are weakness, low grade fever and a lack of objective physical findings.—*Drane, J. Florida M. A., Jan. 1948.*

BOOK ABSTRACTS AND REVIEWS

Health Instruction Yearbook, 1947. Compiled by Oliver E. Byrd, Ed. D., F. A. P. H. A., Professor of Health Education and Director, Department of Hygiene, School of Education, Stanford University. Foreword by Clair E. Turner, D. Sc., Dr. P. H., National Foundation for Infantile Paralysis. Cloth. Price, \$3.00. Pp. 325. Stanford: Stanford University Press, 1947.

For the past several years public health workers and others have been receiving announcements of health instruction yearbooks, all compiled by a single distinguished member of the staff of a distinguished institution of higher learning, and many of them had an opportunity to see and look over the current volume, if not to read it from cover to cover, soon after its annual appearance. Those who have done so have inevitably added greatly to their store of information regarding matters of public and personal health. The volume under current survey is of course the latest—though, it is to be hoped, not the last—in the series.

In format, physical appearance and general manner of treatment, the 1947 Yearbook is essentially the same as its predecessors. The editorial content, or meat, is new.

The field covered is naturally a broad one, ranging from "Births and Deaths in 1946" (Item No. 1) to "The Stevenson Bill" (Item No. 323). In between are other items touching practically every aspect of health. Some idea of its scope may be gained from the fact that the subject index fills four pages of type, while the author index fills three. The listing of sources requires about a page and a half.

About the only suggestion this reviewer would offer for consideration in assembling this volume's successors is that the book be planned, written and edited with a greater sense of its being a single piece of work. If, for example, Chapter IX, "Habit-Forming Substances," (picked at random) were written as a single unit, there is good reason to think that it would be more effective, editorially and educationally, than it is, broken up into a six-paragraph introduction followed by short and generally unrelated articles on "Alcohol as a National Problem," "Consumption of Alcohol Since Repeal of Prohibition," "Alcoholism in Washington, D. C.," "Medical Treatment of Alcoholism," "Personalities of Alcoholic Addicts," "The Alcoholic Hang-Over," "Barbiturate Hazard in Connecticut," "Tobacco and Appetite," and "Addiction to Demerol." Each of these, quoting a different authority and written with little or no regard to the others, provides valuable information but is more like a few pages from an encyclopedia than an excerpt from a book. (One cannot help wondering, incidentally, why the barbiturate problem in Connecticut was considered more important than this problem viewed nationally. The

answer to this, presumably, is that Dr. Byrd found an interesting article in the Weekly Health Bulletin of the Connecticut State Department of Health and decided to give his readers the benefit of it. But would it not have been more worthwhile to give them, instead, the benefit of an article, which must have been published somewhere during the year, on the barbiturate problem in the entire United States?)

But these are minor short-comings. The book shows a vast amount of reading, and, on the whole, the selection of material has been good. It should prove helpful to many busy physicians and public health workers in keeping up with what is going on.

John M. Gibson

Diseases of the Nose, Throat and Ear. By William Lincoln Ballenger, M. D., F. A. C. S., Late Professor, School of Medicine, University of Illinois, Chicago, and Howard Charles Ballenger, M. D., F. A. C. S., Associate Professor and Acting Chairman of the Department of Otolaryngology, Northwestern University School of Medicine, Chicago; assisted by John Jacob Ballenger, B. S., M. D., Research Fellow in Otolaryngology, Northwestern University School of Medicine, Chicago. Ninth edition. Cloth. Price, \$12.50. Pp. 993, with 597 illustrations and 16 plates in color. Philadelphia: Lea and Febiger, 1947.

The popularity of this well known text is established by the fact that it is now appearing in its ninth edition. It was originally written by Doctor W. L. Ballenger who prepared the first four editions. Then Doctor H. C. Ballenger revised the work for its next four editions and has been assisted in this new edition by Doctor J. J. Ballenger. The new edition is slightly longer than the eighth edition.

A new chapter has been added: "Headaches and Neuralgias of the Face and Head." In the chapter entitled "The Surgical Correction of Facial Deformities," a new section on rhinoplastic reconstruction has been added. This chapter is well illustrated to bring out the principles advocated by Doctor Forman and others. The chapter on the "Surgical Treatment of Sinusitis" has been shortened but without any sacrifice of illustrations. Part Five, which is composed of the chapters on endoscopy by Doctor Gabriel Tucker and Doctor C. L. Jackson, has been revised and several new illustrations added. The chapter on Physiology and Functional Tests of the Labyrinth by Doctor Alfred Lewy has been both revised and shortened.

The entire field of otolaryngology is covered in detail. The book is written primarily for the specialist, but there is much of interest in it for the general practitioner, especially as a reference book.

John Allen Jones, M. D.

The Selected Writings of Benjamin Rush. Edited by Dagobert D. Runes. Cloth. Price, \$5.00. Pp. 433. New York 16, New York: The Philosophical Library, Inc., 1947.

This collection of essays and lectures of Benjamin Rush will no doubt be reviewed in a superficially unrelated variety of technical journals and periodicals. The diversity of interests to which these writings will appeal reflected the amazing spectrum of thought upon which Doctor Rush was well qualified to write and lecture, for he was not only an unrelenting champion of the Revolution and a signatory of the Declaration of Independence, but, in addition, a naturalist, a physician with an astute clinical sense, and an essayist, whose commentaries on the contemporary scene mirror the keen clarity of his probing mind. The collection is divided under four topical heads: "On Good Government," "On Education," "On Natural Sciences" and "On Miscellaneous Things" and comprises but a fraction of the productions of this Revolutionary giant.

His admonitions to the still toddling American Government are brilliant in their prophetic grasp of democratic political philosophy, particularly in this age of autocracy, and constituted a tinge of social thought of a shade that would earn for him, in our time, an invitation to some congressional investigating committee. As an essayist, he will delight the antiquarian with the sharpness of his pen strokes as he almost caricatures the Revolutionary scene.

It is as the scientist and physician that he earns his place in these reviews. To comment that he made no lasting contributions to medical information in no way beggars the value of his pioneering clinical approach. Doctor Rush was unquestionably the father of American psychiatry. In his attempt at classification and in his behavioristic slant on personality disorders and neuroses, he struck the first organized blow against the vicious superstition and Quaker morality which engulfed these problems in his day.

The prose is not stylized perfection and the compulsive orderliness of the numbered paragraphs becomes rather tiresome, but the reader should not approach the book as a literary experience. As it gives dimensions to what is generally nothing more than a signature on an historical document, as it provides sparkle to the many facets of this early American, as it provides light in the dimness of psychiatric history and the social sciences, this book will prove most gratifying.

Philip S. Bazar, M. D.

ANNUAL MEETING

MOBILE

APRIL 15, 16, 17, 1948

Insulin in Anxiety—Our routines in the European theater were essentially designed as part of a total-push method of therapy. The patient received his insulin in the morning, and in the afternoon was carried through a strenuous program of physical therapy, occupational therapy, recreational therapy, and individual and group psychotherapy which terminated only at bedtime. For civilian use, our routines have been essentially the same, the afternoon program, of course, being dependent upon the facilities available. The one thing that should be stressed, however, is that these patients are ambulatory and should not remain in bed after the daily treatment has been terminated. Strenuous exercise in the afternoon occasionally may precipitate a feeling of weakness or giddiness if the morning dose of insulin has been large. We encountered no cases of collapse, however, in our 15,000 patients, and the few instances of transitory mild hypoglycemia were quickly alleviated by the ingestion of sugar in the form of simple syrup, which the patient's attendants carried at all times.

Patients are selected for therapy on a basis of their past history and present symptoms. The usual initial dose of insulin is 40 units given at 7 A. M. after a night's fast. Hypoglycemic symptoms rarely appear with this dose, but if for any reason the physician is afraid of his patient's reaction, he can begin with 10 units. We found that 40 units gave us a better start, diminished the total length of time required to achieve precoma dosage, and only in rare cases produced early coma. We had always heard that some people are sensitive to insulin, and occasionally recommended that small test doses be given prior to treatment. None of our patients ever showed such an idiosyncrasy, however, and it seems very doubtful if such sensitivities exist in patients with normal carbohydrate metabolisms.

The insulin dose is increased by 10 to 20 units daily until symptoms of hypoglycemia appear. The optimal dosage is indicated by marked hunger, diaphoresis, anxiety, and a general sense of weakness. Following Sargent's idea, we wanted the patient to become sufficiently hypoglycemic to demonstrate a marked reaction, but still to retain sufficient consciousness to ingest his food without assistance. Ordinarily 70 to 100 units of intramuscular insulin was all that was required. Occasionally a patient will fail to react at all; we have seen several hundred units of insulin fail to produce apparent hypoglycemia. On the other hand, occasional patients will develop definite symptoms with 40 units or less. We have had 2 patients who required only 10 units for their entire course of treatment; such cases are extremely rare, however. If at any time the patient lapses into coma or develops motor excitement, the treatment is terminated for that day and subsequent doses are decreased by 10 units. *Kelley and Thompson, North Carolina M. J., Dec. 1947.*

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

March 1948

No. 9

EXTRAPERITONEAL CESAREAN SECTION FOR THE INFECTED CASE

WITH A REVIEW OF CESAREAN DEATHS IN JEFFERSON
COUNTY OVER A 16-YEAR PERIOD, 1931-1946

BUFORD WORD, M. D.

Birmingham, Alabama

"Sad is the day for any man when he becomes absolutely satisfied with the life that he is living, the thoughts that he is thinking, the deeds that he is doing" (Emerson) ... and, may we add, his obstetric morbidity and mortality.

As early as medical literature records, infection has been the most persistently recurrent cause of maternal deaths, whether the delivery was effected from below or by cesarean section. During recent years increased emphasis has been placed on the method of handling infected and potentially infected cases in active labor requiring cesarean section. Articles have been particularly frequent since Waters¹ published, in 1940, his technic for supravescical extraperitoneal cesarean section.

All authorities agree that classical cesarean section, in the infected case, is to be condemned. The operations advocated in the past for handling the neglected cases are Porro cesarean section, peritoneal exclusion operation, Portes operation, the unforgivable act of performing an embryotomy on a live baby, and, more recently, the extraperitoneal cesarean section.

Perhaps a brief resume' of the mortality for cesarean section in general throughout the country will give a better understanding of the increased mortality from the different

procedures applicable to the contaminated case.

The mortality from any type of cesarean section is higher than that of any other pelvic operation. Stander² believes it to be about 10% on a nation-wide basis. However, in the best clinics in the country it is 1 to 2%.

Dr. King in New Orleans,^{3,4} reporting a series of 300 sections done between 1921 and 1926, found a mortality of 16.1%; in 1,108 cases done between 1926 and 1936 he found a mortality of 5.9%.

Quigley,⁵ in 1939, reporting 937 cases covering a 10-year period in Rochester, New York, found a mortality of 2.9%. DeNormandie⁶ reported 2,106 abdominal deliveries in Massachusetts in 1937 with a mortality of 3.1%. Irving⁷ compiled from the literature

2. Stander, H. J.: Textbook of Obstetrics, D. Appleton-Century Co., ed. 3, 1945.

3. King, E. L.: A Comparison of Two Cesarean Section Surveys Carried Out in the City of New Orleans, Am. J. Obst. & Gynec. 40: 860, 1940.

4. King, E. L.; Dicks, J. F.; Reddoch, J. W.; Stadiem, M. L.; Zander, E. L.; Meyer, H., and McCormick, E. P.: A Review of the Cesarean Sections Performed in New Orleans During the Years 1927 to 1936 Inclusive, New Orleans M. & S. J. 90: 731, 1938.

5. Quigley, J. K.: Cesarean Section, A Ten-Year Study Conducted in Rochester and Monroe Co., New York State J. Med. 40: 699, 1940.

6. DeNormandie, R. L.: Cesarean Section in Massachusetts in 1937, New England J. Med. 219: 871, 1938.

7. Irving F. C.: Place of Cesarean Section, J. Connecticut Med. Soc. 1: 483, 1937.

Read before the Jefferson County Medical Society, Birmingham, November 17, 1947.

1. Waters, E. G.: Supravescical Extraperitoneal Cesarean Section; Presentation of a New Technic, Am. J. Obst. & Gynec. 39: 423-434, 1940.

11,491 cases, with a mortality of 5.8%. Arnold⁸ reviewed the literature and compiled 15,786 cesarean sections with a mortality of 4.69%. Lynch,⁹ in 1937, collected 12,055 cases with a mortality of 4.1%. Bland¹⁰ surveyed 19,480 cases found in 65 different papers, with a combined mortality of 6.5%. Other reports have been higher and some lower. These figures in general, however, speak for themselves.

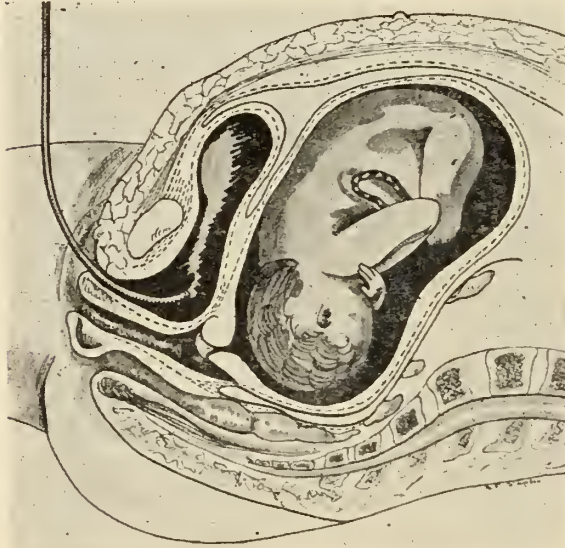


Fig. 1. Sagittal section of pregnancy at term. Dotted line shows distribution of endopelvic fascia. It is noted this fascia is continuous with the transversalis fascia of the abdominal wall where it lies superficial to the peritoneum.

Gordon,¹¹ in reviewing a group of cases done in the Borough of Brooklyn between 1921 and 1926, found the mortality for classical sections to be 5.9%, and that for the lower segment (laparotrachelotomy) to be 4.3%, while Matthews and Acken,¹² reviewing 1,066 cases, found a mortality for classi-

cal sections of 3.9% and 1.9% for the low sections.

No fault is to be found with the operator who performs a classical or lower segment cesarean section before his patient goes into labor, provided the proper indication for section is present. There may be, however, some argument as to the time after the patient goes into labor when she becomes definitely infected. Stander² states that ascending infection begins when the patient has been in labor 6 hours, whether she has been examined rectally, vaginally, or not at all.

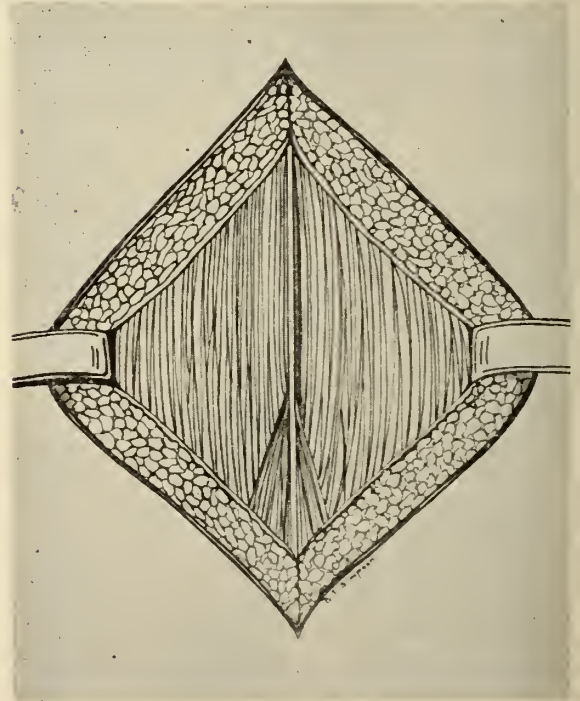


Fig. 2. The rectus sheath has been retracted on each side, exposing the fibers of the recti and pyramidalis muscles.

Gordon¹¹ has shown vaginal examination prior to section, and also the length of time in labor, to affect the mortality. In a group in which vaginal examination was not done the mortality was 5%, as compared to a series in which vaginal examination was done, with a mortality of 12.8%. The cases in his series not in labor were sectioned with a mortality of 3.5%, early in labor, 6.3%, late in labor 7.7%, and with those on whom attempts at delivery had failed the mortality rose to 13.6%.

The mortality of patients sectioned after being in labor is due, for the most part, to peritonitis. Irving¹² believes this occurs in

8. Arnold, L. E.: Cesarean Section; A Comparative Study, *Am. J. Obst. & Gynec.* 39: 802, 1940.

9. Lynch, F. W.: More Conservatism in Cesarean Section, *Surg., Gynec. and Obst.* 64: 338, 1937.

10. Bland, P. B. (Discussion), Lynch, F. W.: More Conservatism in Cesarean Section, *Surg., Gynec. & Obst.* 64: 338, 1937.

11. Gordon, Charles A.: Survey of Cesarean Section in the Borough of Brooklyn, City of New York, *Am. J. Obst. & Gynec.* 16: 307-338, 1928.

12. Irving, Frederick: A Simple Method of Performing Extraperitoneal Cesarean Section in Potentially Infected Cases, *Medical Record and Annals, Houston, Texas* 31: 300-302, August 1937.

two ways: from the spillage into the peritoneal cavity at the time the baby is removed, and leaks from the uterine wound subsequent to closure.

PORRO

In 1876 Porro first described his operation of supracervical hysterectomy at the time of section in the severely infected case. Several articles have been written since that time on this procedure, notably those by Wertenbaker,¹³ Phaneuf,¹⁴ Lazard,¹⁵ Gustafson,¹⁶ Potter and Potter,¹⁷ Reis and DeCosta,¹⁸ and Lash and Cummings.¹⁹ The mortality of this operation, as these authors have reported, ranges from 0% (Reis and DeCosta) to 11.3% (Lash and Cummings). However, the procedure carries a higher mortality than these figures indicate, if it were known for the entire country.

The Porro operation is particularly popular in the Mid-West in handling the severely contaminated case and is the operation of choice at the Chicago Lying-In Hospital. They have done, at this institution, 200 such procedures and have lost only one case.²⁰ The disadvantage of this operation is obvious in that the young primipara loses all hope of bearing another child.

PERITONEAL EXCLUSION

Irving,¹² in 1937, reported a simple method of performing a peritoneal exclusion operation. After the peritoneal cavity is opened, and before the uterus is incised, the parietal and visceral peritoneum is sutured in such a way that no spillage into the general peritoneal cavity occurs. He reported 45

cases done by this method with one death. The disadvantage of this operation is that it results in high fixation of the uterus and possibly subsequent sterility. The principle of the operation has been used in technics described by Aldrich²¹ and Smith.²² This operation does diminish spillage into the general peritoneal cavity but does not definitely prevent its occurrence. The peritoneum is also likely to be torn in extracting a large baby.

PORTES

In 1923 Dr. Louis Portes of Paris reported an operation he had devised to salvage the uterus of the infected young primipara. The operation is done by exteriorizing the pregnant uterus, closing the abdominal opening securely about the lower portion, and then extracting the baby from the uterus, leaving the infected uterus to involute outside the abdominal cavity. The uterus is kept moist with warm compresses and after the infection has subsided, a second operation is done,

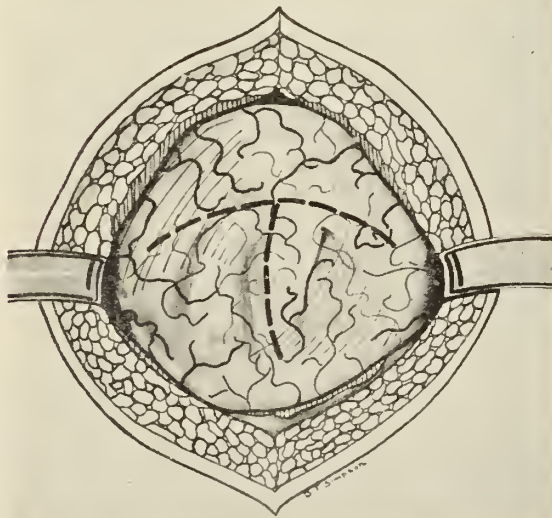


Fig. 3. The recti muscles have been separated in midline, and the bladder instilled with a solution of methylene blue, causing the bladder to bulge into the wound. The "T" incision is shown by the dotted line. The horizontal bar of the "T" is across the dome of the bladder.

13. Wertenbaker, Wm.: Extirpation of Pregnant Uterus at Term, *Ann. Surg.* 94: 1066-1069, 1931.

14. Phaneuf, Louis E.: Porro Cesarean Section, *Am. J. Surg.* 13: 65-66, 1931.

15. Lazard, Edmund M.: Porro Cesarean Section, *California & West. Med.* 39: 156-158, 1933.

16. Gustafson, Gerald W.: Hysterectomy in Pregnancy, Labor & the Puerperium, *Am. J. Obst. & Gynec.* 43: 221-231, 1942.

17. Potter, Irving W., & Potter, Milton G.: A Modified Porro Operation, *Am. J. Surg.* 52: 32-37, 1941.

18. Reis, Ralph A., & DeCosta, Edwin J.: Cesarean Hysterectomy *J. A. M. A.* 134: 775-779, 1947.

19. Lash, A. F., & Cummings, W. G.: Porro Cesarean Section, An Analysis of 53 Cases: Significance of Indication, *Am. J. Obst. & Gynec.* 30: 199-203, 1935.

20. Dieckmann, W. J.: Personal Communication.

21. Aldrich, A. H.: Extraperitoneal Latzko Cesarean Section, *Am. J. Obst. & Gynec.* 34: 788-800, 1937.

22. Smith, Erwin F.: Transcervical Cesarean Section with Peritoneal Exclusion and Bladder Mobilization, *Am. J. Obst. & Gynec.* 39: 763-775, 1940.

replacing the uterus in the peritoneal cavity. Vogt and Vogt²³ recently reported a case successfully done on a young primipara. They quote Couvelaire's series of 32 cases, with a mortality of 6.2%. Besides a long period of hospitalization and the necessity of two operations, the other undesirable features of this operation are obvious.



Fig. 4. The supravescical (endopelvic) fascia is being freed from the bladder dome.

EMBRYOTOMY ON A LIVE BABY

Embryotomy on a live baby, although advocated by some authorities in the past, is now an obsolete procedure.

EXTRAPERITONEAL CESAREAN SECTION

The extraperitoneal cesarean section, although recently popularized by Waters^{1, 24} of Margaret Hague Maternity Hospital, is an old story.

Joerg, in 1809, was the first to propose the operation, although there is no record of a case being done. In 1821, Ritgen attempted the operation through a flank wound adjacent to Poupart's ligament but ran into severe hemorrhage and abandoned the procedure.

23. Vogt, W. H., and Vogt, W. H. Jr.: The Portes Cesarean Section with Report of Case, *Am. J. Obst. & Gynec.* 42: 449-501, 1941.

24. Waters, E. G.: Supravescical Extraperitoneal Cesarean Section (Waters Type); Experience with 250 Cases, *Am. J. Obst. & Gynec.* 49: 739-755, 1945.

In this country, in 1824, Philip Syng Physick proposed a true extraperitoneal cesarean section, described in a letter by Horner to Dewees and published in a footnote of Dewees' textbook on midwifery (1830). An operation was never done by Physick or Dewees and the item was deleted from subsequent editions of the text.

Almost 100 years later Frank of Bonn (1907) described the operation, and at about the same time Sellheim (1908) and Latzko (1909) reported articles in the literature on the procedure.

Frank and Sellheim attempted the supravescical approach to the uterus as recommended by Physick, giving him credit for the suggestion. However, they became lost in the fascial planes about the bladder, and Latzko's procedure, which is a true extraperitoneal operation with a paravesical approach, became popularized. Jellinghaus, at the New York Lying-In Hospital, in 1923, began using the procedure. Later Steele²⁵ and Burns²⁶ reported their experiences with this method of approach to the uterus. In 1940 Edward G. Waters¹ published his operation of the supravescical approach to the lower uterine segment without entering the peritoneal cavity. He reported 32 cases in his original article and since that time approximately 700 extraperitoneal cesarean sections have been done at Margaret Hague. Some of these cases have been reported by Norton of the same institution who favors the paravesical (Latzko) approach.

Ricci,²⁷ of New York, describes the same operation Waters uses by employing a catheter to outline the bladder. More recently he has discussed his results with 175 cases.²⁸

The two types of extraperitoneal cesarean section have been described in succession by the following authors: the paravesical approach, Ritgen, Latzko, Steele, Burns and

25. Steele, Kyle B.: Extraperitoneal Cesarean Section, *Am. J. Obst. & Gynec.* 19: 747-758, 1930.

26. Burns, Henry T.: The Latzko Extraperitoneal Cesarean Section, *Am. J. Obst. & Gynec.* 19: 759-766, 1930.

27. Ricci, James B.: Simplification of the Physick-Frank-Sellheim Principle of Extraperitoneal Cesarean Section, *Am. J. Surg.* 47: 33-40, 1940.

28. Ricci, James V.: The Physick-Sellheim Principle of Extraperitoneal Cesarean Section, *Am. J. Surg.* 71: 3-11 (June) 1946.

Norton;²⁹ the supravescical approach by Physick, Frank, Sellheim, Waters and Ricci.

In the Waters operation, described in figures 1-9, a subumbilical incision is made, extending to the symphysis. The bladder is filled with 200 cc. of weak solution of methylene blue and the supravescical fascia is dissected upward from the dome of the bladder. The peritoneum adherent to this fascia is reflected off the bladder with the fascia and, if the operation is done properly, is never entered. The bladder is then emptied and peeled downward off the cervix, just as is done in performing a total hysterectomy. The pubo-vesico-cervical fascia is then incised transversely and stripped upward off the uterus. In this manner the posterior plica of bladder peritoneum is elevated without being injured. The uterine cavity is entered through its lower segment by means of a transverse curvilinear incision and the baby extracted. Closure is done with two layers of interrupted catgut sutures in the uterine wall and one layer in

the subvesical fascia (pubo-vesico-cervical). A drain is placed behind the bladder to be removed in 24-48 hours. The first part of the operation is meticulous anatomic dissection, which should be accomplished within the first five or ten minutes. After the fascia is dissected from the bladder, the procedure can be executed with the same dispatch as any other type section.

At the Margaret Hague Maternity Hospital in Jersey City, during the same period covered by this study here in Jefferson County (1931-1946), there were 87,505 live births and 2,591 cesarean sections with a general overall mortality of 1.2%. Of these cesarean sections 699 were extraperitoneal, with five deaths, or a mortality of 0.7%. During the seven-year period from 1940 through 1946, 501 extraperitoneal cesarean sections were done, with one death, a mortality of 0.2%. There have been no deaths in the last 450 extraperitoneal cesarean sections.

Drs. Latzko, Norton and Waters all agree that the type of extraperitoneal section is less important than its use in indicated cases.

A description of the fascial planes encountered in doing this operation is found in an article by Goff³⁰ and in Gallaudet's³¹ book on the fascial planes of the body and, of course, in the excellent photographs and drawings of articles by Waters and Ricci.

REVIEW OF CESAREAN DEATHS IN JEFFERSON COUNTY

In Jefferson County, over a 16-year period from 1931 through 1946, there were 859 maternal deaths. Seventy-two (72) of these deaths followed cesarean section, an incidence of approximately 8.3%.

In New York City, in 1939, 21.3% of puerperal deaths followed cesarean section. In California, in 1928, 24% of puerperal deaths followed section, and in Boston (1933-1935) 27% followed this procedure.³²

These figures appear to flatter Jefferson County. However, if careful analysis is made, you will see they represent a math-

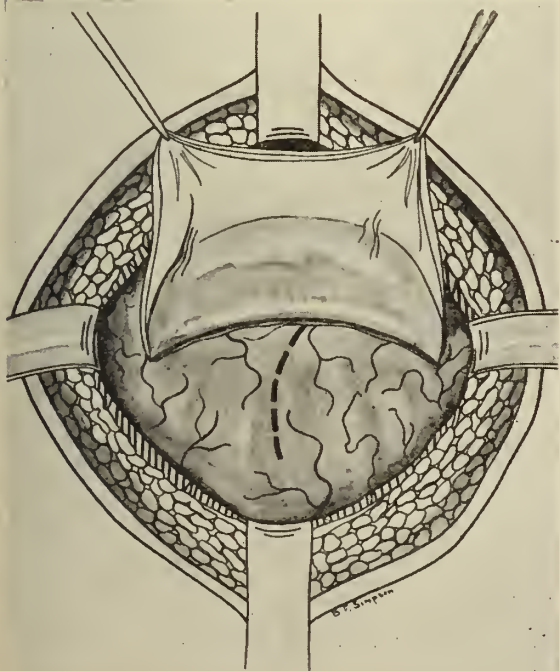


Fig. 5. The supravescical (endopelvic) fascial flap has been elevated from the bladder dome. The peritoneum lies behind this fascia.

29. Norton, James F.: A Paravesical Extraperitoneal Cesarean Section Technic; With an Analysis of 160 Paravesical Extraperitoneal Cesarean Sections, *Am. J. Obst. & Gynec.* 51: 519-526, 1946.

30. Goff, Byron H.: A Histological Study of the Perivaginal Fascia in Multipara, *Surg., Gynec. & Obst.* 52: 32-42, 1931.

31. Gallaudet, B. B.: A Description of the Planes of Fascia of the Human Body, New York, Columbia University Press, 1931.

32. Gordon, Charles A., & Rosenthal, A. H.: Cesarean Section, The Modern Operation, *Am. J. Surg.* 54: 528-586, 1941.

ematological freak. The low percentage of cesarean deaths in Jefferson County is due to the high total of maternal deaths. Nevertheless, it should be mentioned that the maternal death rate in Jefferson County over the years we studied has declined progressively from 10.1 deaths per 1000 live births in 1931 to 1.9 deaths per 1000 live births in 1945,³³ thanks to the good work of the Maternal Welfare Committee of Jefferson County.



Fig. 6. The bladder has been emptied, and fascia between bladder and peritoneum is incised following course of dotted line. The peritoneal reflection (posterior plica) is seen shining through the connective tissue fibers.

In delivering 85,657 live births in Jefferson County from 1931 through 1946, 2,045 cesarean sections were done with 72 deaths, an overall mortality rate of 3.52%. At the Margaret Hague during the same period of time there were 87,505 live births, of which 2,591 were sections, with 31 deaths. With fewer sections done in Jefferson County and approximately the same number of live births, more than twice as many mothers were lost.

33. Maternal Mortality in Birmingham & Jefferson Co., Alabama, 1946. Joint Report of the Jefferson Co. Med. Soc. & Jefferson Co. Bd. of Health, Birmingham, Alabama.

A review of the death charts reveals many reasons for this increase in cesarean mortality. Infection, as usual, leads the field as the cause of death, with hemorrhage, combined with infection, as the second most frequent cause. Hemorrhage and infection are both serious problems to manage. When they appear together they are far more lethal than all other causes combined. In analyzing the cause of death in the 72 cases following cesarean section, it will be noted that sepsis occurred in 38 of these patients, and sepsis, together with hemorrhage, in four additional cases, making a total of 42 infected cases in the entire series. These 42 cases are the ones in which some type of extraperitoneal cesarean section would be indicated.

The cases were studied with the following points in mind: date of admission to hospital, date of operation, date of death, time in labor prior to operation, indication for section, type section performed, cause of death, and, in passing, it was noted whether a live baby was obtained.

Additional facts obtained from this study reveal that the operations were performed

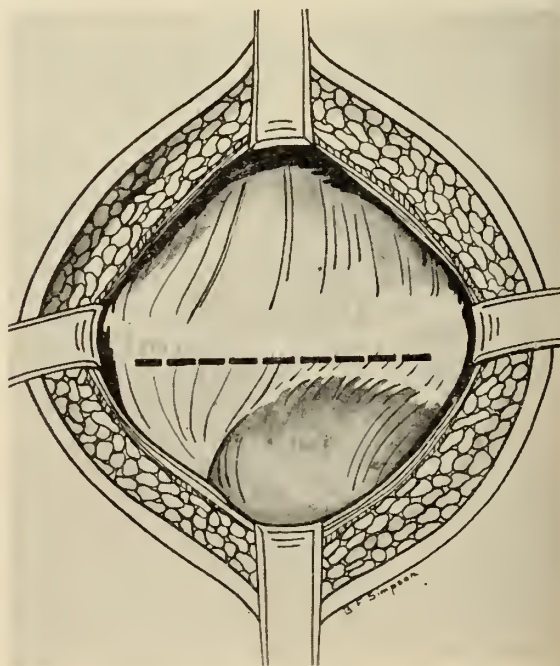


Fig. 7. The bladder has been separated from the supravescical fascia, and lower uterine segment exposed. Dotted line shows place for incision through subvesical fascia. After incision is made, the peritoneum is elevated upward and the bladder pushed downward exposing the muscle fibers of the lower uterine segment.

by 38 different doctors, 38 cases by general surgeons and 34 cases by obstetricians. Additional surgery, a practice to be condemned in doing a section on an infected case, was found to have been performed on five cases. The additional surgery was salpingectomy in 4 cases and repair of umbilical hernia in one case. Forty-four (44) live babies were obtained, 15 stillborns, and in 13 cases no mention of the baby could be found. There were 9 autopsies performed on this series of 72 deaths. The pathological diagnosis was as follows: 6 peritonitis, 2 pneumonia, one hemorrhage.

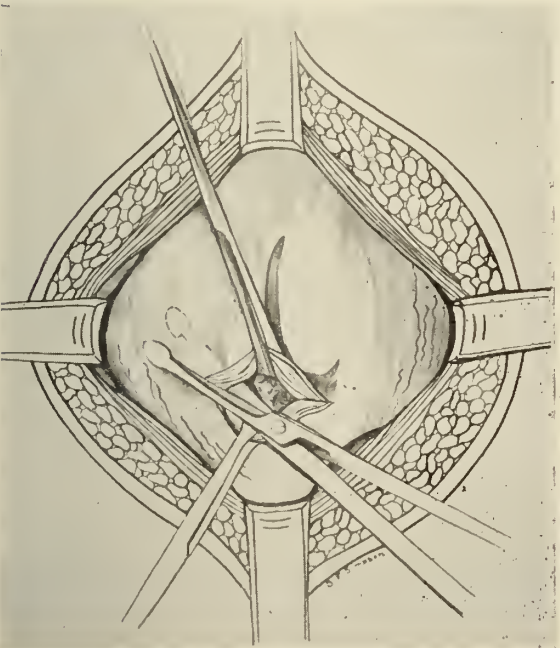


Fig. 8. A transverse curvilinear incision is being made through the lower uterine segment exposing the baby's head.

The postoperative clinical course in the patients who died of sepsis followed a similar pattern. Temperature rose higher each day, together with increasing abdominal distention, nausea and vomiting of dark green material. For most of the cases, it was the typical course of spreading peritonitis. The average day of death for this group was the 6.4th postoperative day.

The other feature of mismanagement (other than entering the peritoneal cavity and doing additional surgery on infected cases) gleaned from this study was a failure of the attendant to realize the importance of replacement of blood loss in the hemorrhage

case. Adequate and continued replacement of blood loss in the hemorrhage cases is well known and was stressed by the Maternal Welfare Committee report in 1935,³⁴ but was often disregarded in cases studied in this report. One case of hemorrhage was taken from the ambulance to the operating room without being typed for transfusion. The only preoperative laboratory test on her chart showed a hemoglobin of 35%.

Philip Williams,³⁵ in analyzing 63 cesarean deaths of patients who had been in prolonged labor at the time of section, found that 47 died of sepsis. This is a higher percentage than noted in this study. However,

AN ANALYSIS OF 72 CESAREAN DEATHS
 1931-1946 Jefferson County

TABLE 1

CAUSE OF DEATH

Sepsis	38
Sepsis and hemorrhage	4
Hemorrhage	6
Pneumonia	6
Eclampsia	5
Pulmonary embolism	3
Shock	2
Cardiac	2
Anesthetic	1
Hydronephrosis	1
Septicemia	1
Intestinal obstruction	1
Not stated	2
Total	72

TABLE 2

INDICATION FOR SECTION

Cephalopelvic disproportion	24
Eclampsia	8
Placenta previa	6
Premature separation	5
Previous section	4
Persistent rt. occ. post.	3
Heart disease	3
Bandl's ring	2
Cervical dystocia	2
Fibroid	2
Post maturity	1
Ruptured uterus	1
Previous vaginal plastic	1
Epilepsy	1
Hydronephrosis	1
Not stated	8
Total	72

34. Maternal Mortality in Birmingham & Jefferson Co., Alabama, 1931-1935. Joint Report of the Jefferson Co. Med. Soc. & the Jefferson Co. Bd. of Health, Birmingham, Alabama.

35. Williams, Philip F.: An Analysis of 206 Maternal Deaths Associated with Prolonged Labor, J. Michigan M. Soc. 42: 365-375, 1943.

it must be borne in mind that all of his cases had been in labor longer than 24 hours and only 23 of the cases in this series had been in labor a like period.

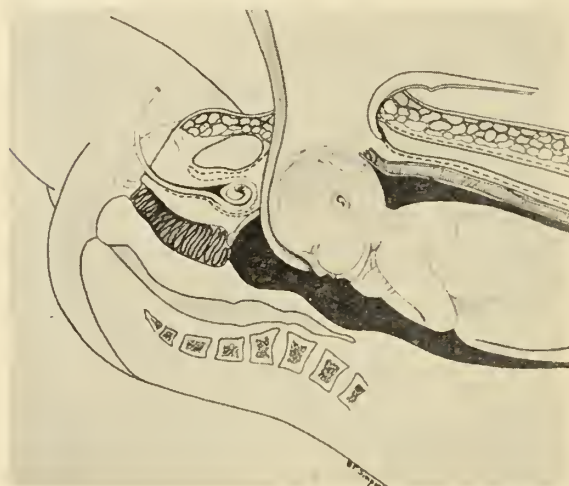


Fig. 9. The uterus has been opened and the baby is ready to deliver. The peritoneum remains intact.

TABLE 3
URGENCY OF SECTION

Dystocia	37
Hemorrhage	11
Elective	10
Eclampsia	8
Not stated	6
Total	72

TABLE 4
TIME IN LABOR IN INFECTED CASES

Not in labor	6
Up to 12 hours	3
12-24 hours	7
24-36 hours	7
36-48 hours	6
48-60 hours	2
60-72 hours	3
72-84 hours	2
84-96 hours	3
Not stated	3
Total	42

TABLE 5
TYPE OF SECTION PERFORMED
In All Cases

Classical	52
Cervical	17
Porro	3
Total	72

In Infected Cases

Classical	31
Cervical	8
Porro	3
Total	42

TABLE 6
AUTOPSY DIAGNOSIS

9 Cases	
Peritonitis	6
Pneumonia	2
Hemorrhage	1
Total	9

TABLE 7
AN ANALYSIS OF 63 SECTION DEATHS
Following Prolonged Labor (over 24 hrs.)
Philadelphia, Pa. 1931-41 by Philip F. Williams³⁵

		Sepsis	Shock	Hemor- rhage	Others
Classical	42	32	8	1	1
Low cervical	16	11	3	1	1
Porro	4	3	1	0	0
Extra	1	1	0	0	0
Total	63	47	12	2	2

COMMENT

It will be noted from the tables above that 38 cases died of sepsis, 4 cases died of hemorrhage and sepsis and one case died of intestinal obstruction. Although the intestinal obstruction case was not infected, death was a direct result of the peritoneal cavity having been entered. The small bowel became adherent to the uterine wound and death resulted from a second laparotomy.

In retrospect, the extraperitoneal cesarean section described in this paper would have been applicable in 43 of the 72 fatal cases and, in my opinion, would have saved the lives of a good number of these mothers.

Shortly after becoming interested in this subject some time ago, I wrote to a number of the leading obstetric authorities throughout the country, asking for a "thumbnail sketch" of their opinion of the extraperitoneal cesarean section in infected cases. The prompt replies showed that each is presently giving careful thought and consideration to this procedure. The following are excerpts from the replies.

Dr. Bayard Carter: "The extraperitoneal cesarean gives us the opportunity to allow women to labor longer and has cut down our incidence of cesarean markedly."³⁶

Dr. Nicholson J. Eastman: "As I see it, the chief and only substantial advantage of extraperitoneal cesarean section over cesarean hysterectomy is that it saves the uterus."³⁷

36. Carter, Bayard: Personal Communication.

37. Eastman, Nicholson J.: Editorial, *Obstetrical & Gynecological Survey* 2: 663, Oct. 1947.

Dr. H. J. Stander: "... 3.38% of our cases of section are extraperitoneal or the exclusion type."²

Dr. R. A. Bartholomew: "There is certainly a field for the extraperitoneal especially on a service receiving neglected and mishandled cases."³⁸

Dr. Edward A. Schumann: "On my service we have the greatest enthusiasm about the extraperitoneal cesarean section."³⁹

Dr. Paul Titus: "Specifically, I may say that this operation, with chemotherapy, has, in my opinion, almost entirely displaced the Porro cesarean section for infected cases."⁴⁰

Dr. L. M. Randall: "To date we have not employed the procedure and have no reason to regret this."⁴¹

Dr. Frank E. Whitacre: "I believe that the extraperitoneal operation has a very limited field and that another operation, such as the low cervical cesarean section, can usually be used to advantage, sometimes combined with hysterectomy."⁴²

Dr. J. P. Greenhill: "May I say that I have never performed an extraperitoneal cesarean section ... most likely with the use of penicillin, fewer and fewer extraperitoneal cesarean sections will be done in the presence of potential or actual infection during labor."⁴³

Dr. W. J. Dieckmann: "We see no reason to change our method since we believe we would have a very definite increased mortality while we were gaining the experience with the extraperitoneal section that the Hague group has had."²⁰

The opinions of Waters, Cosgrove and Norton have been repeatedly expressed in the literature as being in favor of the operation.

SUMMARY

1. A brief review of the literature on the mortality of cesarean section has been recorded.

38. Bartholomew, R. A.: Personal Communication.

39. Schumann, Edward A.: Personal Communication.

40. Titus, Paul: Personal Communication.

41. Randall, L. M.: Personal Communication.

42. Whitacre, Frank E.: Personal Communication.

43. Greenhill, J. P.: Personal Communication.

2. The different methods of handling infected labor cases have been described.

3. The supravescical extraperitoneal cesarean section (Waters technic) has been described in detail and is recommended as the procedure of choice in infected and potentially infected cases already in labor.

4. An analysis of the cesarean deaths in Jefferson County covering a 16-year period (1931-1946) has been presented in table form.

5. The opinions of several leading obstetric authorities have been compiled.

929 South Twentieth Street.

Streptomycin in Tuberculosis—The present consensus in regard to the role of streptomycin in the treatment of human tuberculosis is that it exerts a palliative effect by producing some degree of bacteriostasis. Most patients who have active infection with fever show decided clinical improvement within the first two weeks after treatment is started. The immediate results generally have been most striking in the miliary, meningeal and laryngeal forms of tuberculosis. The meningeal form is not benefited unless the drug is given intrathecally as well as intramuscularly. The disease requires large doses, probably a minimum of two to three grams a day in adults for prolonged periods. Treatment should not be undertaken unless adequate amounts of streptomycin are available to permit continuous therapy for at least three to four months. The development of resistant strains has been very frequent and has limited the effectiveness of this agent. It is generally agreed that streptomycin cannot be regarded as a substitute for present methods of sanatorium and surgical therapy.

From the point of view of the community as a whole it is probably wise, for the present, to limit the use of streptomycin in tuberculosis to the few clinics where carefully controlled and prolonged treatment and study are possible. Only on the basis of the results in such controlled groups of cases may one expect to determine the real and permanent value of streptomycin in the various forms of tuberculosis. The results of such studies carried on over a sufficiently long period may clarify the limits of usefulness and the best method of employing streptomycin both in individual cases and in groups of cases. The possibility of the use of combinations of streptomycin with the sulfone drugs also requires extensive study before any general program is suggested.

It is important to emphasize that general hospitals, particularly with the crowded conditions now prevalent, are not equipped to handle this problem and should not be expected to do so.—*Finland, New Orleans M. & S. J., Feb. '48.*

PAROXYSMAL HEMOGLOBINURIA

TRACY LEVY, M. D.

And

JOHN B. WATSON, Captain, M. C., A. U. S.

Veterans Administration Hospital

Tuscaloosa, Alabama

"Blood in the urine" is frequently the only symptom that a patient complains of when he seeks medical care. Before a diagnosis can be arrived at, a differentiation must be made as to the type of blood. Is it hemoglobinuria or hematuria?

Syphilis is now accepted as the essential cause of paroxysmal hemoglobinuria, and the serologic test for syphilis is almost invariably positive. Nearly all cases have occurred in children with congenital lues or adults long past the secondary stage of acquired syphilis.¹ Whereas it can be said that 95 percent of the persons with paroxysmal hemoglobinuria due to the cold hemolysins are also syphilitic, only a small portion of persons with syphilis exhibit paroxysmal hemoglobinuria.²

CASE REPORT

This patient was admitted to the hospital on September 22, 1947 with a history of passing blood in his urine. This had occurred three times during his life. The first episode occurred in 1936 while the patient was working at a turpentine still. At that time he passed clotted blood in his urine and experienced pain in the urethra during micturition. This lasted approximately six weeks and necessitated a change of jobs. There were no recurrences until the onset of the patient's present illness, September 15, 1947, when, without prodromata, he noted blood in the urine. The blood was dark red in color, but there were no clots, chills, fever or malaise. This condition persisted only a few hours. On September 21, 1947, he again noted blood in the urine, and, at this time,

noted a dull "toothache" like pain in the kidney region.

On further questioning, it was found that in February 1941 he had had a chancre on his penis, and at the same time had been informed that his blood, after being examined, was positive. Over a period of three months he was treated with 20 injections in the arm and 10 injections in the hip. At the termination of this treatment he was told that his blood and spinal fluid were negative.

The physical examination revealed a physically normal, 30 year old white male. When admitted to the hospital, his blood pressure was found to be slightly elevated—160/100. A careful follow-up revealed normal readings consistently. Laboratory findings were: red blood count 5,500,000; white blood count, 6,400; differential white cell count was normal; the malaria smear was negative. Urine examination revealed 25 white blood cells per high power field. The Kahn test and Wassermann reaction were both reported as 4 plus.

Reexamination of the urine again revealed 25 white blood cells per high power field. Therapeutic doses of methenamine (15 grs. three times daily) were administered. The coagulation time was one minute, the bleeding time three minutes and fifteen seconds, and clot retractility was normal in 24 hours. Fishberg test on the urine revealed specific gravities of 1.031, 1.028, and 1.036. The Donath-Landsteiner¹ reaction was positive for autohemolysins. The phenol-sulfonphthalein showed 20 percent in the first hour and 9.5 percent in the second hour. The spinal fluid examination revealed a positive Wassermann reaction with elevation of the colloidal gold curve in the middle zone. Other tests on the spinal fluid were within normal limits: Blood examination revealed a sedimentation rate of 2 mm.; blood sugar, 90 mgm. percent; nonprotein nitrogen, 35 mgm. percent; urea, 12 mgm. percent; uric acid, 212 mgm. percent; creatinine, 1.2 mgm. percent; quantitative

Published with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the authors.

1. Cecil, R. L.: Textbook of Medicine, W. B. Saunders Company, Philadelphia, 1943.

2. Maire, E. D.: Paroxysmal Hemoglobinuria Due to the Cold Hemolysins, Arch. Int. Med. 76: 292-298 (Nov.-Dec.) 1945.

Kahn, 10 Kahn units. The Donath-Landsteiner reaction was still positive 8 days after admission, and the icteric index was 5. The fragility test on the patient began at 0.40 percent sodium chloride and was complete at 0.36 percent. The control fragility test began at 0.44 percent sodium chloride and was complete at 0.28 percent. All benzidine tests on the urine were negative. Intravenous pyelogram and cystoscopic studies of the urinary system were normal.

On the day after admission the patient complained of a "breaking out" on his penis. These lesions resembled mucous patches and involved the glans and prepuce. There was no involvement of the mouth or anus. Dark-field examination was impracticable at this time.

The patient was treated with penicillin, 100,000 units every three hours, given intramuscularly, for a total of 10,000,000 units. At the end of this period of therapy, reexamination of the blood for autohemolysins showed the Donath-Landsteiner reaction was negative for autohemolysins.

The patient returned for a follow-up one month later. During the interim he had been symptom free in spite of a moderate drop in seasonal temperature during this period. Laboratory studies of the blood on this date revealed: Kahn, 3 plus, Wassermann reaction, 4 plus; quantitative Kahn, negative in all dilutions; Donath-Landsteiner reaction negative for autohemolysins. The erythrocyte sedimentation rate, complete blood count, coagulation and bleeding time, and fragility test were all within normal limits.

DISCUSSION

The history of hemoglobinuria, as an entity, dates back to 1854 when Dressler differentiated it from hematuria in a patient with congenital syphilis. Gull observed in 1866 that exposure to cold precipitated attacks of hematuria but thought that the shaking chill was instrumental in producing the hemoglobinuria. Rosenbach, in 1880, reported hemoglobinuria following immersion of the patient's feet in cold water for ten minutes. This is now known as the Rosenbach test. The year following, Ehrlich, in a test which now carries his name, noted that hemoglobinemia could be produced locally in susceptible persons by

placing a ligature around a finger and immersing it in cold water. Goetz first recognized the significance of syphilis as the cause of cold hemoglobinuria in 1884: and in 1904 Donath and Landsteiner demonstrated the cold hemolysins in the serum, and this reaction is named for them.³

Donath and Landsteiner's thorough serologic investigations made clear the following facts: (1) that a lysin which can unite with red blood cells only at low temperatures is present in the plasma or serum of patients suffering from this disease; (2) that the hemolytic action takes place in two phases (a) the union of the lysin with the red blood cells at low temperature, and (b) lysis of the red blood cells on warming; (3) that complement is essential for the second phase of the reaction; (4) that the lysin is an isohemolysin and an autohemolysin; and (5) that the patient's red blood cells are not hemolysed by the serum of a normal person of the same blood group.³

Several cases of this disease have been reported in the more recent literature. During World War II, Hughes reported a case where an aviator developed hemoglobinuria following chilling while in the air.⁴ Gendel and Benjamin⁵ reported two cases treated with both antiluetic therapy (bismuth and mapharsen) and penicillin with no response to treatment.

The symptoms associated with an attack of hemoglobinuria usually consist of malaise, often headache, pain in the back and legs, chilly sensation or a shaking chill, transitory fever, during which the temperature may be 104° F or higher, and cyanosis. Frequently the liver or spleen is enlarged during an attack. There may be vasomotor disturbances, such as urticaria or vesicular lesions, and, in a few cases, symptoms of Raynaud's disease. The urine, dark red or Burgundy colored, sometimes described as black by the patient, often contains hemoglobin, methemoglobin, hematin, and hyaline, granular and pigmented casts, and urobilin. Mild jaundice following an attack is common.¹

3. Ross, J. F.: Hemoglobinemia and Hemoglobinuria, *New England J. Med.* 233: 691-696 (Dec. 6) 1945.

4. Hughes, J. F.: Syphilitic Paroxysmal Hemoglobinuria, *M. J. Australia* 2: 503 (Dec. 18) 1943.

5. Gendel, B. R., and Benjamin, J. E.: Paroxysmal Cold Hemoglobinuria, *J. Connecticut M. Soc.* 10: 406-408 (May) 1946.

The diagnosis is made on a history of excretion of dark colored urine during the winter months following exposure to cold, a positive Wassermann reaction, and a positive Donath-Landsteiner reaction.¹ Paroxysmal hemoglobinuria must be differentiated from the other hemoglobinurias caused by chemical poisons, toxins of infectious diseases, introduction of foreign proteins into the blood stream, infarction of the kidneys, march hemoglobinuria, paroxysmal nocturnal hemoglobinuria, and Marchiafava-Micheli syndrome.^{1, 3, 6, 7, 8}

6. Gilligan, D. R.; Altschule, M. D., and Katersky, E. M.: Physiological Intravascular Hemolysis of Exercise. Hemoglobinuria and Hemoglobinemia Following Cross-Country Runs, *J. Clin. Invest.* 22: 859-869 (November) 1943.

CONCLUSIONS

1. A case of paroxysmal hemoglobinuria due to syphilis is presented. The history of the disease and the classical signs are briefly reviewed.

2. The patient responded satisfactorily to treatment with penicillin as noted by the reversal of the Donath-Landsteiner reaction.

3. The patient gave a history of a primary lesion of syphilis six years prior to the onset of the hemoglobinuria, and exhibited lesions suggestive of secondary syphilis after the onset of the hemoglobinuria.

7. Makin, M.: A Case of March Hemoglobinuria, *Brit. M. J.* 1: 844 (June 24) 1944.

8. Palmer, R. A., and Mitchell, H. S.: March Hemoglobinuria, *Canad. M. A. J.* 49: 465-472 (December) 1943.

MESENTERIC THROMBOSIS

MASSIVE RESECTION OF SMALL BOWEL WITH RECOVERY

S. J. CAMPBELL, M. D.

Birmingham, Alabama

INTRODUCTION

Mesenteric thrombosis is one of the few diseases in which an immediate diagnosis is of paramount importance. Such a diagnosis permits prompt surgical intervention, which, at the present time, is the only satisfactory therapeutic measure. The value of surgery decreases, almost literally, with the passing of every hour.

ETIOLOGY

The etiology, as well as the pathology, is easily explained both physiologically and anatomically. However, the underlying causes, which originally give rise to this entity, are legion. The following might serve as a rough outline of the causes for mesenteric thrombosis:

- a. Debilitating and degenerative diseases.
- b. Inflammatory lesions of the abdomen.
- c. Neoplastic lesions of the abdomen.
- d. Mechanical factors.
- e. Blood dyscrasias.
- f. Undetermined.

A large percentage of cases is seen in elderly individuals with some degree of

athero- or arteriosclerosis. Berger and Blondis feel that the combination of arteriosclerosis, advanced age, auricular fibrillation, left ventricular failure and sudden abdominal pain may be pathognomonic of mesenteric thrombosis. In any case there is little doubt that it occurs most frequently at an age where complications based on previous illnesses or degenerative diseases are most likely to be present. Inflammatory lesions, such as phlebitis and appendicitis, as well as the absorption of toxins or chemicals from the gastrointestinal tract, have long been assumed to play a role. Infected emboli from the cardiac valves or from other sites might also be considered under this heading. Neoplastic lesions, previous surgery, trauma, hernia and volvulus should be considered under the heading of mechanical obstructions. Whittaker and Pemberton found that 60% of the cases were not related to previous surgery while 40% were.

PATHOLOGY

Generally speaking there may be three types of mesenteric obstruction:

- a. Arterial.
- b. Venous.
- c. Combined.

From the Birmingham Medical and Surgical Clinic.

In a series of 60 combined cases Whittaker and Pemberton found the following ratio of the above types of obstruction:

- a. Arterial 19.
- b. Venous 27.
- c. Combined 14.

In arterial thrombosis the superior mesenteric artery is almost always involved. In the above mentioned series, 18 out of 19 cases were due to obstruction of the superior mesenteric artery. Giamarino and Jaff state that this is due to the fact that the superior branch comes off the aorta earlier and also because it forms a more direct continuation of the abdominal aorta. Single or multiple hemorrhagic infarcts can be found. They may be due to emboli (from vegetations on the cardiac valves) or thrombi (due to arteriosclerosis or pressure from an abdominal tumor).

In venous obstruction the muscular structure of the intestine remains viable longer. Experimentally it has been proven that the small gut may recover spontaneously from venous obstruction so long as the involvement does not exceed 6 inches. Venous obstruction is usually thrombotic, and most frequently caused by infectious processes of the abdominal organs. It is of interest that the terminal 4 inches of the ileum is not usually involved since it is supplied by the ileocolic artery. It is also self evident that the degree of damage finally incurred will depend on these two basic factors:

1. Location of the occlusion.
2. Number of occlusions.

SYMPTOMS AND DIAGNOSIS

It is unfortunate that the symptoms in this entity do not differ radically from those of other abdominal conditions. Unless this entity is constantly kept in mind, the correct diagnosis may be delayed until the patient has passed beyond the operable stage. It has been stated by Donaldson and Stout that a diagnosis can be made as to the type of obstruction, that is whether it is arterial or venous. In arterial obstruction the need for an early diagnosis and prompt treatment is even greater.

The following symptoms are usually found in venous obstruction:

1. Slow onset.
2. Colicky pain.
3. Abdomen tender to deep palpation.
4. Coffee ground vomitus.

5. Occult blood.
 6. Intestinal fluid levels on x-ray absent.
 7. White blood count not markedly elevated.
 8. Engorged intestinal wall may or may not be palpable as a mass.
 9. Temperature usually low.
 10. Blood on glove on rectal examination.
- Arterial obstruction differs from the above in these points:

1. Sudden onset.
2. Violent or extreme pain.
3. Rapid onset of gangrene with corresponding clinical symptoms.

Arterial and venous conditions have the following points in common:

1. Tenderness.
2. Rigidity.
3. Distention.

Other points of interest are that this condition occurs twice as often in males as in females and that, as has been previously said, it occurs more often with advanced age. Rendich and Harrington suggested that the x-ray diagnosis has been too often overlooked in this condition. They state that in several cases they have observed a very striking picture. The large intestine is distended over the left flexure (the area supplied by the superior mesenteric artery) with a very sudden cessation of this distention. In contrast to a mechanical obstruction barium will pass through. No fluid levels are seen.

In a differential diagnosis the following conditions must be considered: Intestinal obstruction, appendicitis, perforated peptic ulcer, acute cholecystitis, acute gastritis, some infectious diseases, food poisoning, simple enteritis and acute pancreatitis, volvulus of the bowel and intussusception.

TREATMENT

In the surgical treatment the following points should be borne in mind. Inspection of the affected area for viability will be the best index as to the amount of intestine which will have to be removed. Douglas suggests a needle prick through a vessel close to its intestinal attachment. Observation of the circulation here will be an excellent index as to the point of resection. Even if 1/3 to 1/2 of the intestine has to be resected the patient may still survive. Fox and Scott and Lissimore report the postoperative use of Dicumarol as a means of pre-

venting the spread of embolic processes. With the increased interest in the anti-coagulants it is expected that this drug will be used more often in the postoperative management of these cases.

PROGNOSIS

The prognosis is much better in venous than in arterial obstruction. However, in any case the prognosis remains grave. Without surgery the mortality approximates 100%. With surgery the mortality is around 30%. The mortality increases very rapidly with an increase in the loss of time between the period of onset and the time of surgical intervention. In operations performed on the first day after onset of the clinical symptoms the mortality is around 25%, while in cases operated on the 4th day the mortality averages 83%.

CASE REPORT

Mr. B., age 65 years, was admitted to the surgical service of AAF Regional Hospital, Robins Field, Ga., with a provisional diagnosis of acute gangrenous appendicitis. He arrived on the surgical ward at 10 P. M. and was complaining only mildly of abdominal pain. He stated that shortly after eating a tuna fish sandwich for lunch he had been stricken with severe abdominal cramps, nausea and vomiting. He had several loose stools about one hour after the onset but they were not bloody. Shortly thereafter he had taken a large dose of Sal Hepatica which produced two large black stools. He did not report for work that afternoon and was not seen by a physician until 8 P. M., shortly before he was sent to the hospital by ambulance.

He had always been in excellent health and had worked as a civilian employee for one year at the Army air base. There had been no previous serious illnesses or operation. On previous examinations for employment no mention had been made of any heart ailment or cardiac irregularity.

Examination revealed a pale, thin, poorly nourished and developed, white male who appeared moderately ill. The temperature was 97° F., and the pulse rate was 90 beats per minute. The blood pressure was 130 mm. Hg. systolic over 90 mm. Hg. diastolic. The heart was not enlarged, the sounds were distant but regular. No murmurs could be heard. The abdomen was slightly distended

and diffusely tender throughout, with the maximum tenderness localized to the right of the umbilicus. There was a moderate degree of muscle spasm and rebound tenderness. Rectal examination was negative except for tenderness high in the right lower quadrant. No masses could be palpated and no blood was noted on the examining finger. The blood count revealed 18,250 white blood cells with 88% neutrophils. Urinalysis was within normal limits. A flat plate of the abdomen revealed no gas under the diaphragm and only a few loops of distended small bowel were noted. A provisional diagnosis of acute abdomen was made and he was prepared for surgery. Before going to the operating room 1000 cc. of 5% glucose in saline were administered intravenously.

Under spinal (novocaine crystals, 150 mgs.) a mid-right-rectus muscle splitting incision was made. Upon entering the abdominal cavity approximately 500 cc. of bloody fluid was encountered. A large area of gangrenous bowel involving the distal jejunum and ileum was met. The area of gangrenous bowel was well demarcated. There was an effusion of old blood into the mesentery which extended up to the origin of the vessels. A resection of sixty-one inches of small bowel was performed, removing as much of the mesentery as possible, reestablishing the continuity of the bowel with a side-to-side, isoperistaltic anastomosis. Interrupted cotton sutures were used throughout except for the inner layer of the anastomosis where chromic No. 000 catgut was used. At the conclusion of the operation, 10 grams of sulfanilamide crystals were placed in the abdomen, and closure performed in layers without drainage.

During the operation he received two units of plasma and 500 cc. of 5% glucose in saline, intravenously. He left the table in good condition. Three hours after surgery 750 cc. of citrated blood were given. The following day he was allowed up to void. Every day thereafter he was allowed out of bed to go to the bathroom. A Levine tube with suction remained in place for three days. On the fifth postoperative day he was allowed full liquid diet.

His convalescence was uneventful except for a cervical lymph node abscess that developed on the 12th postoperative day. The wound healed by primary union and bowel

function was normal. Two months following surgery he had returned to his job and when last heard from six months later was in excellent health.

SUMMARY

1. A brief review of the literature on mesenteric thrombosis has been presented.

2. A case of massive resection of the small bowel with recovery has been reported.

Note: Since this paper was prepared we have operated on a 60 year old man with acute arterial mesenteric thrombosis, resecting six feet of gangrenous bowel. It is now the 5th postoperative day and his convalescence to date has been uneventful. There has been no distention and his bowels are moving well. This case will be reported in detail at a later date.

811 South 20th Street

REFERENCES

- Berger, S. S., and Blondis, R. T.: Mesenteric Thrombosis, *Am. J. Digest. Dis. & Nutrition* 3: 300-303 (July) 1936.
- Blue, J. H., and Lafferty, C. R.: Mesenteric Vascular Occlusion, *South. M. J.* 33: 968-969 (September) 1940.
- Brown, M. J.: Mesenteric Venous Occlusion: A Clinical Entity, *Am. J. Surg.* 49: 242-249 (August) 1940.
- Donaldson, J. H., and Stout, B. F.: Mesenteric Thrombosis, *Am. J. Surg.* 29: 208-217 (August) 1935.
- Donaldson, J. K., and Siye, E. D.: Venous Mesenteric Occlusion, *Surgery* 6: 80-90 (July) 1939.
- Douglas, J. D.: Mesenteric Vascular Occlusion, *Ann. Surg.* 102: 636-644 (Oct.) 1935.
- Falls, L. S.: Mesenteric Thrombosis. Operation and Recovery, *Am. J. Surg.* 47: 128-130 (January) 1940.
- Ficarra, B. J.: Mesenteric Vascular Occlusion, *Am. J. Surg.* 66: 168-177 (August) 1944.
- Fox, P. F.: Mesenteric Thrombosis with Postoperative Administration of Dicoumerol, *Illinois M. J.* 86: 314-317 (December) 1944.
- Geis, Arthur F.: Mesenteric Thrombosis. Case with Recovery, *Am. J. Surg.* 65: 268-270 (September) 1944.
- Giamarino, H. J., and Jaff, S. A.: Mesenteric Vascular Occlusion, *Arch. Surg.* 45: 647-652 (October) 1942.
- Laufman, H., and Scheinberg, S.: Arterial and Venous Mesenteric Occlusion, *Am. J. Surg.* 58: 84-92.
- Luke, J. C.: Venous Thrombosis. Treatment with Heparin, *Lancet* 1: 552-553.
- Mathews, S. W.: Acute Arterial Mesenteric Intra-Vascular Occlusion. *Mil. Surgeon* 80: 223-230 (March) 1937.
- Rendich, R. A., and Harrington, L. A.: Roentgenologic Observation in Mesenteric Thrombosis, *Am. J. Roentgenol.* 52: 317-322 (September) 1944.
- Scott, R. A. M., and Lissimore, N.: Mesenteric Thrombosis in Lymphatic Leukemia Treated with Dicoumerol, *Lancet* 2: 405-406 (September) 1944.
- Whittaker, L. D., and Pemberton, J. D.: Mesenteric Vascular Occlusion, *J. A. M. A.* 111: 21-24, 1938.

The Elderly Patient—In addition to being well aware of the diseases to which the older person may be subject it is important to recognize those complaints apt to occur in the older patient apparently as a part of the aging process itself. The latter are best treated by early explanation and de-emphasis. A potent source of difficulty in this respect is the well-known irregularity of sleep to which they are subject. Attempts to force their sleeping habits to return to those of thirty years ago by the use of barbiturates or bromides may result in restlessness or delirium which is often difficult to control. They do not uniformly achieve the desired effect and incalculable damage to the patient's self-confidence may result from such episodes.

Similar caution must be exercised in regard to complaints directed at their diminished reserve capacities for various other functions. It is not advisable to outline a program of distasteful exercise in an attempt to relieve complaints of muscular weakness.

The proper evaluation of disease is more difficult in older patients than in younger ones. It may not be safe to assume that because overt evidence of disease of an organ-system is not present that that organ-system is capable of carrying out its function in a satisfactory way in the presence of increased stress due to a disease process elsewhere. As an example one may cite the appearance of hyperglycemia, acidosis or azotemia in the presence of a systemic infection. Such reserve powers are decreased more often for more functions in the aged than in the young. Since we are dealing with patients on the descending part of the curve it is important to guide the patient through a phase of increased stress due to incidental disease with a sure hand, for one does not have the natural optimism of youth to fall back upon.

Indecision in the diagnosis and procrastination in treatment of such cases are to be avoided. This means that the indicated diagnostic procedures should be carried out as carefully as in a young wage-earner. (There are, however, sometimes serious practical objections to this generalization.) It is well to remember that improvements in surgical and anesthetic technics and in physical therapy have vastly increased the sphere of usefulness of these therapeutic procedures for the older patient.

Interested families are prone to look upon an incidental or moderately prolonged illness in the aged as "the beginning of the end." Thenceforth they speak in low voices, remove all outside contacts and, in effect, segregate him from the world and even the household. There is a tendency to be so overprotective that the old patient is not allowed to carry out even the simplest tasks. They may lead at least to a sense of frustration and even to violent emotional outbursts. The attempt to prevent this attitude is the obligation of the physician.—*Rathburn, South. M. J., Feb. 1948.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham

C. E. ABBOTT Tuscaloosa

JOHN L. BRANCH Montgomery

D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

March 1948

THE PRESIDENT'S PARAGRAPH

In this issue of the Journal will be found the completed program for the meeting of our State Medical Association in Mobile, April 15, 16 and 17.

The April issue will reach you after our annual meeting, and so the President will take this opportunity to urge each member of the Association to make a special effort to attend this convention. The records show that the Mobile meeting is never as well attended as a more centrally located meeting. However, it has been several years since you had an opportunity to meet in Mobile. You should go to this meeting especially, on account of the guests of the Association who will come long distances to take part on the program.

J. P. Chapman.

THE USE OF GOLD IN RHEUMATOID ARTHRITIS

"Treatment of rheumatoid arthritis with gold compounds, initiated in Europe twenty years ago, has gradually grown in favor in American medicine during the past ten years. Recently, Fraser condensed the literature on chrysotherapy in this disease and noted that most observers report a favorable response in 70 to 80 per cent of

patients. Short, Beckman and Bauer found more than forty publications on gold therapy in the English literature up to 1946, almost all of which were favorable toward this type of treatment.

"The chronic nature of rheumatoid arthritis and its tendency to spontaneous improvement or exacerbation make difficult the accurate evaluation of progress. This is further complicated by the optimistic nature of many patients who are prone to symptomatic improvement with any treatment administered with a hopeful attitude on the part of the physician."

Thus do Browning, Rice, Lee and Baker¹ open their inquiry into this subject. The authors tell us in conclusion that "forty-seven patients with active rheumatoid arthritis were observed for periods of eighteen months to six years. All received gold therapy in amounts ranging from less than 500 to more than 3,000 mg. of a salt containing 50 per cent gold. Those who continued in an improved state after treatment constituted only 23 per cent of the total, whereas 62 per cent showed no appreciable change, and 15 per cent became worse.

"A high incidence of toxic reactions to gold was noted, 62 per cent of patients having been involved. Although most of these side-effects were of little consequence, there were 2 cases of exfoliative dermatitis, with one death."

The Indianapolis investigators further tell us that "in these patients treated with gold salts the results have not approached those reported in the majority of publications on this subject. An explanation may be found in the longer period during which the patients were observed. In many cases apparent improvement was seen after treatment, but in few cases was there lasting effect. In this report no attempt has been made to discuss separately patients who improved only to relapse, for it is believed that a period of more or less temporary relief is of little consequence in this disease."

Browning, Rice, Lee and Baker have been thorough and have observed their patients for a much longer time than have many other clinicians. Their work was done at

1. Browning, James S.; Rice, Raymond M.: Lee, W. Vernon, and Baker, Leslie M.: Gold Therapy in Rheumatoid Arthritis, New England J. Med. 237: 428 (Sept. 18) 1947.

the Arthritis Clinic and the Lilly Laboratories for Clinical Research at the Indianapolis City Hospital. And the fact that, after such prolonged and careful study, their enthusiasm for chrysotherapy is not at all pronounced should indeed be noted by the profession. It has long been known that gold has been used extensively in the treatment of arthritis in Europe and, quite possibly, it is beginning to be employed upon a much larger scale here in America. The use of gold certainly deserves a thorough trial, but at present it would seem that it should be employed only by those physicians who are so situated that they can keep the patients under constant and very close observation. Practitioners not in a position to do this would do well, for the present at least, not to resort to chrysotherapy, for its beneficial results are highly doubtful and its known toxicity is high and, at times, even fatal.

BLOOD FOR MEDICAL PRACTICE

The first four units of a national network of regional blood centers to be operated by the American Red Cross, in cooperation with physicians and hospitals, have been opened in Rochester, New York, Wichita, Kansas, Stockton, California, and Atlanta, Georgia.

Expansion of the organization's new activity, known as the National Blood Program, will eventually provide similar centers at focal points throughout the nation. The objective is to have 140 metropolitan and 250 secondary centers functioning within the next three to five years. Several hundred mobile units will serve as connecting links between these fixed centers and outlying suburban and rural sections.

The purpose of the program is to provide blood, without charge, to anyone who may need it. The Red Cross will assume the entire cost of collecting, processing and distributing blood to hospitals. The only expense to a patient will be the medical or hospital fee in connection with administration of the blood.

The new blood program was launched by Red Cross only after consultation with leaders of the American Medical Association, the American Hospital Association, the Army, the Navy and the Veterans Administration.

Unlike the wartime Red Cross blood program which collected blood for use only by the armed forces, the new national program will provide blood for patients in civilian, Veterans Administration and U. S. Public Health Service Hospitals, as well as for those in Army and Navy hospitals. Total annual needs are estimated to be 3,700,000 pints.

Each of the fixed blood centers and the mobile units will be staffed by a physician and competent, specially trained registered nurses.

Blood furnished to physicians and hospitals will have been examined for safe medical use, labeled according to group, Rh factor and the expiration date of usefulness for transfusion. Proper refrigeration will be maintained from the time of collecting until delivery. Highest professional and technical standards established by authorities in the field of blood will be followed nationally in every phase of the program's operation.

Technical supervision of centers will be vested in a technical director, a physician. A center director will be responsible for the non-medical administration of the center and the services of trained volunteers will be utilized for non-technical duties.

The National Blood Program will not begin operation in a community until each cooperating chapter has the support and endorsement of the local medical society, the official health authorities and the hospitals. Locally, a medical advisory committee will stand ready to give professional counsel to the chapter in its blood program activities.

Initially, the National Blood Program will provide urgently needed whole blood. Before blood at a hospital reaches its expiration date of usefulness for transfusion it will be returned to centers and processed into plasma. Eventually, it is planned that blood derivatives such as plasma, serum albumin, immune serum globulin, antihemophilic globulin and others of proven clinical value will be provided. As the program expands and sufficient blood is collected to warrant diverting some of it for fractionation, the Red Cross will make contracts with reliable commercial laboratories equipped to produce blood fractions. When these derivatives are available in sufficient quantities they, like whole blood, will be furnished

without cost to physicians and hospitals. Distribution of blood derivatives will be made through local and state health departments.

This is the largest peacetime health program of the Red Cross in the organization's history. It is an important adjunct to medical science in its unceasing efforts to save lives and prevent human suffering. The program is a long range one and will require time, continuing research and unceasing cooperation between the Red Cross and the medical profession before its full benefits can be assured to all.



JOSIAH KIRBY LILLY DIES

Josiah Kirby Lilly, chairman of the board of directors of Eli Lilly and Company, died on February 8, 1948. He was 86 years old.

Mr. Lilly was born in Greencastle, Indiana. His father, Colonel Eli Lilly, founded the company on May 10, 1876. Josiah Kirby, as "a boy with a wicker basket," delivered the first pound of a Lilly product to a nearby wholesale druggist. He was then 14 years old.

In 1880, he entered the Philadelphia College of Pharmacy and Science, from which he graduated in 1882. Upon returning to Indianapolis he became superintendent of the plant, in which capacity he continued for about sixteen years. When Colonel Lilly died in June 1898, his son was elected president of the company. After thirty four years as president, Mr. Lilly became chairman of

the board of directors in 1932. He retired from active service with the company on January 1, 1945.

Under his management Eli Lilly and Company became one of the outstanding organizations in the pharmaceutical field, with international distribution.

In recognition of his services in civic, scientific, educational, and cultural organizations, eight colleges and universities conferred honorary degrees upon him. Among his active hobby interests were his apple orchards, the music of Stephen Foster, and the growing of orchids.

Mr. Lilly's relations with those who worked for his company were singularly happy. He was generous in giving credit to his associates for accomplishments and promoted harmony that brought teamwork in the organization. His sympathetic interest in the individual problems of company personnel endeared him to all employees.

ARMY MEDICAL DEPARTMENT TESTS NEW WONDER DRUG

The U. S. Army Medical Department soon will stage the most extensive test yet made of the efficacy of chloromycetin, the only drug thus far discovered which is as effective against certain rickettsial disease-causing organisms as the sulfa drugs and penicillin are effective against bacteria. The test will be made in an effort to stop the spread of the dreaded scrub typhus in the Far East.

Dr. J. E. Smadel, director of virus research at the Army Medical Center, and one of the discoverers of this substance which may mark one of the important landmarks in the history of medicine, plans to fly to the Malay States early this spring with a supply of the drug for the treatment of native plantation workers among whom scrub typhus is making serious inroads.

The carrier of the infection is a mite which is probably spread by rodents. During the war many of the plantations in Malaya were allowed to go back to brush. This resulted in a big population of infected rodents. Workers sent in to clear the plantations have suffered a heavy mortality rate.

The early experiments at the Army Medical Research and Graduate School showed that chloromycetin was especially effective against the micro-organism responsible for

scrub typhus, which is also known as rickettsial tsutsugamushi and as "Japanese River Fever." This organism is related to the organism responsible for epidemic typhus and causes a quite similar disease, but typhus vaccine has proved useless as a protection against scrub typhus.

The new drug showed considerable potency against both typhus and scrub typhus organisms in experimental infections of incubated eggs and in animals. It also proved effective against several other maladies due to rickettsia, the still mysterious organisms which find a place between bacteria and the filterable viruses, tiniest of living things which are responsible for such maladies as influenza and poliomyelitis.

Experience has shown, however, that laboratory results do not always work out in the field. Dr. Smadel has just returned to Washington from Mexico City where the new drug was tested against a small outbreak of typhus fever. The Army is not yet ready to announce the results. The proposed attack on scrub typhus is considered of even greater importance since this malady has proved difficult to treat in any known way and existing vaccines are not adequate in their protection.

The outlook is quite promising, according to the Surgeon General. At least a start has been made on specific drug treatment of the large class of rickettsial diseases which are responsible for some of the most devastating scourges of the human race. It has even been found to be mildly effective against one virus disease, psittacosis, and the door may have been opened to attack on most of these maladies. The psittacosis organism, however, is one of the largest of the viruses and just falls short of being classified as a rickettsia.

Scrub typhus was a major army problem in the Pacific during the war and the story of its ravages is extremely dramatic. Efforts to produce a vaccine against it cost the lives of three American and several British workers. Nothing was accomplished until the war was nearly over. An apparently effective vaccine finally was prepared from the macerated lungs and spleens of infected rodents but when this was given actual field tests it was found to be ineffective.

RADIOLOGICAL SOCIETY OF ALABAMA

The Radiological Society of Alabama will hold its annual meeting in Mobile, Friday, April 16.

Doctor and Patient—When a physician makes a diagnosis of incurable disease, he must decide how much information should be given the patient. A few patients are frank to admit that they do not want to be told if anything seriously wrong is found. Here the problem in question does not arise. There is another group of patients, however, who pretend to want detailed information when in reality they do not.

A short time ago a patient presented himself in the office of a well known diagnostician with the statement: "I have been to many physicians recently and have gotten no satisfaction; hence I am coming to you to learn the truth. I am tired of having doctors beat around the bush about my illness. I want the facts straight." After the clinical examination had been completed, the patient reminded the physician that he wanted the facts straight. When told that the study indicated a "growth in the liver," he asked if that meant cancer. Told that it did, he stood, turned pale and fell back in a chair in a faint. Obviously, he had deceived both the physician and himself into thinking that he wanted the information in that manner.

There is a third type of patient who is anxious about himself, of course, but who is reasonably calm and sincere. It may be important for him to know if his illness is apt to terminate fatally. He may need to adjust his affairs for the benefit of his family.

Here is a time when the physician needs courage. He may take the easiest course by saying almost nothing, or, as some physicians do, he may tell the patient that he will be all right when actually he will not. One falsehood leads to another, and soon the patient may lose confidence in both the integrity and the ability of his physician. Painful it is to see not only fear but also doubt and uncertainty written in the expression of a sick person.

In this situation the physician will do well to practice the art of medicine. The patient should be made to feel his keen and sincere interest. Unpleasant words such as cancer and death are to be avoided. Hope can be held out by reviewing progress in treatment with new agents which have transformed so-called fatal diseases into illnesses that are controllable or curable. Diabetes mellitus, pernicious anemia and bacterial endocarditis are a few outstanding examples. Thus as the patient is being given to understand that he should put his affairs in order, he also is given to feel that his physician is abreast of the times and that he will take advantage of new developments.—*Editorial, J. Florida M. A., Feb. 1948.*

PROGRAM OF THE ANNUAL SESSION

MOBILE

APRIL 15, 16, 17, 1948

HOTEL ADMIRAL SEMMES

GENERAL INFORMATION

All sessions of the Association will be at the Admiral Semmes Hotel, convention headquarters.

The maximum time consumed by essayists must not exceed fifteen minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal of the Association.

All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

Papers will be called in the order in which they appear on the program. Should the reader be absent when called, his paper will be passed, and called again when the program is concluded.

GUESTS

Members of the Woman's Auxiliary, the Alabama State Nurses' Association, the Gulf Coast Clinical Society, and visiting physicians are invited to attend the meeting. The Association will likewise welcome, as guests, members of the allied medical and welfare groups of Alabama. When in attendance, guests are asked to register at convention headquarters in the lobby of the Admiral Semmes Hotel.

THE FIFTY YEAR CLUB

Physicians who graduated fifty or more years ago will be honored by the Association at this meeting. They are asked to sign the "Fifty-Year Club" register when enrolling at the registration desk in the lobby of the Admiral Semmes Hotel.

HOST TO THE ASSOCIATION

The Mobile County Medical Society

OFFICERS

J. U. Reaves, *President*
N. R. Clarke, Jr., *Vice-President*
W. W. Scales, *Secretary*
W. L. Sellers, *Treasurer*

BOARD OF CENSORS

G. O. Segrest, *Chairman*
L. W. Hollis
A. M. Cowden
A. A. Wood
J. H. Little

COMMITTEES

Eugene D. Bondurant, *General Chairman*
David F. Sellers, *Co-Chairman*
William L. Sellers, Jr., *Co-Chairman*

Reception

Charles A. Mohr, *Chairman*
Andrew D. Henderson, *Co-Chairman*
Emmett B. Frazer, *Co-Chairman*
William R. Meeker, *Co-Chairman*
Entire Membership of Mobile County Medical Society

Distinguished Guests

John M. Wilson, *Chairman*
J. Edward Beck
Norborne R. Clarke, Jr.
F. Marion Inge
Joseph H. Little
Lee Wright Roe

Scientific Exhibits

Arthur A. Wood, *Chairman*
John Day Peake, *Co-Chairman*
I. Milton Wise, *Co-Chairman*
Alexander J. Brown
Otis L. Chason
Samuel Eichold
John E. Moss
William E. North
E. Ralph Porter
Freeman S. Schrantz
Edward C. Terrell
Howard S. J. Walker
Warren A. Yemm

Commercial Exhibits

Toulmin Gaines, *Chairman*
Monte L. Moorer, *Co-Chairman*
John R. Armistead
Claude M. Cleveland
Charles S. Davis
Joseph B. Graham
George H. Ingram
George C. Kilpatrick
Geo. W. Newburn, Jr.
J. Flournoy Rowe

Hotels

Joseph O. Muscat, *Chairman*
William H. Minor, *Co-Chairman*
Arthur A. Amendola
Richard P. Lester
Leon V. McVay
Clarence V. Partridge
Mack J. Roberts
Charles H. Savage, Sr.
Richard V. Taylor, Jr.

Publicity

Edward S. Sledge, *Chairman*
John C. Hope, Sr., *Co-Chairman*
Lawrence H. Hinton, *Co-Chairman*
Toxey D. Haas
John C. Hope, Jr.
Percy J. Howard
William C. Jones
Frank H. Maury
Warren C. Stephens

Meeting Places, Loud Speakers, Lights

M. Vaun Adams, *Chairman*
J. Coleman O'Gwynn, *Co-Chairman*
Marion A. Kirklin
Herbert S. McClure
James J. Peterson
Charles E. Lange
Vincent P. Muscat
Charles H. Savage, Jr.

Movies, Lantern Slides

Eric T. Doehring, *Chairman*

J. Gillis Sanders, *Co-Chairman*

R. J. Ceravolo Raymond S. Schear
Thomas B. Henderson Isaac C. Sumner
Geo. W. Newburn, Sr. William C. Tisdale

Entertainment

Howard S. J. Walker, *Chairman*

Selden H. Stephens, *Co-Chairman*

Socrates N. Rumpanos, *Co-Chairman*

Frank T. England A. N. Tally Roach
Lawrence B. Farrior Harry N. Webster, Jr.
Leonce D. Newman Carleton W. Winsor
Virginia E. Webb Stephen A. Zieman

Transportation

John T. England, *Chairman*

Hugh G. Mulherin, *Co-Chairman*

Charles A. Baumhauer Philip P. Gilchrist
William A. Blake Benj. B. Kimbrough
Leland L. Brown William C. Minnich
William G. Fonde Claude M. Warren
John A. Zieman

Finance

Cecil H. Ross, *Chairman*

F. Thomas Boudreau, *Co-Chairman*

H. B. Dowling, Jr. Lotta W. Hollis
Henry W. Gray A. Hayes Zieman

OFFICERS OF THE ASSOCIATION

President

J. P. Chapman..... Selma

Vice-Presidents

Frank Jordan..... Huntsville
B. W. McNease..... Fayette
J. Paul Jones..... Camden
E. L. Gibson..... Enterprise

Secretary-Treasurer

Douglas L. Cannon..... Montgomery

State Board of Censors

E. V. Caldwell, *Chairman*..... Huntsville
J. O. Morgan..... Gadsden
French Craddock..... Sylacauga
John L. Branch..... Montgomery
E. G. Givhan, Jr..... Birmingham
J. D. Perdue..... Mobile
J. W. Simpson..... Birmingham
K. A. Mayer..... Lower Peach Tree
T. B. Hubbard..... Montgomery
C. E. Abbott..... Tuscaloosa

State Health Officer

D. G. Gill..... Montgomery

PROGRAM

First Day, Thursday, April 15

Morning Session

9:00 A. M.

Admiral Semmes Hotel

Call to order by the President—

Dr. J. P. Chapman, Selma.

Invocation—

Dr. Howard Reaves, Pastor, First Baptist Church, Mobile.

Address of Welcome—

Dr. J. U. Reaves, President, Mobile County Medical Society.

Address of Welcome—

Mr. E. Roy Albright, President, Alabama Pharmaceutical Association, Mobile.

PART I

REPORTS OF STANDING COMMITTEES

1. Prevention of Blindness and Deafness—
Dr. Lucien Brown, Chairman.
 2. Mental Hygiene—
Dr. Frank A. Kay, Chairman.
 3. Accidents and Industrial Hygiene—
Dr. Benjamin Meyer, Chairman.
 4. Maternal and Infant Welfare—
Dr. T. M. Boulware, Chairman.
 5. Physician-Druggist Relationships—
Dr. R. E. Cloud, Chairman.
 6. Anesthesiology—
Dr. E. B. Robinson, Jr., Chairman.
 7. Contract Practice—
Dr. Ivan C. Berrey, Chairman.
 8. Counsellor Distribution—
Dr. George A. Denison, Chairman.
 9. Postgraduate Study—
Dr. Ralph McBurney, Chairman.
 10. Cancer Control—
Dr. Karl F. Kesmodel, Chairman.
(b) American Cancer Society, Alabama Division
Mrs. Ray Meade, State Commander, Birmingham.
 11. Medical Care and Public Relations—
Dr. Carl A. Grote, Chairman.
- Report of Secretary-Treasurer—
Dr. Douglas L. Cannon, Montgomery.
- Report of the Committee of Publication—
Dr. Douglas L. Cannon, Montgomery.
- Reports of Vice-Presidents—
- (1) Southwestern Division
Dr. J. Paul Jones, Camden.
 - (2) Northwestern Division
Dr. B. W. McNease, Fayette.
 - (3) Southeastern Division
Dr. E. L. Gibson, Enterprise.
 - (4) Northeastern Division
Dr. Frank Jordan, Huntsville.

Message of the President—
Dr. J. P. Chapman, Selma.

INTERMISSION

PART II

SCIENTIFIC PROGRAM

- 11:00 A. M. *Treatment of the Congenital Club Foot*—
Dr. S. Ralph Terhune, Birmingham.
- 11:15 *The Surgical Treatment of Carcinoma of the Esophagus*—
Dr. Wyatt C. Simpson, Florence.
- 11:30 *Some Clinical Aspects of Auricular Fibrillation*—
Dr. Clarence K. Weil, Montgomery.

* * *

Afternoon Session

Thursday, April 15

The afternoon session will begin promptly at 1:45 P. M. General discussion will not be possible on account of limited time.

- 1:45 P. M. *Some Medical Complications of Pregnancy*—
Dr. Joe W. Perry, Montgomery.
- Discussion: Dr. Robert F. Monroe, Assistant Clinical Professor of Obstetrics and Gynecology, University of Louisville School of Medicine.
- 2:05 *Fracture Surgery in a Small Community*—
Dr. French H. Craddock, Jr., Sylacauga.
- 2:20 *Respiratory Infection in a General Hospital*—
Dr. James B. McLester, Birmingham.
Dr. C. W. C. Moore II, Talladega.
- 2:35 *Recent Advances in Cancer Research*—
Dr. Stanley P. Reimann, Director, Lankenau Hospital Research Institute, Philadelphia.

INTERMISSION

- 3:10 *The Use of Sedatives, Hypnotics and Analgesics in General Practice*—
Dr. Perry P. Volpitto, University of Georgia School of Medicine, Augusta.
- 3:40 *Recent Developments in Nutrition*—
Dr. Tom D. Spies and Dr. Robert Stone, Birmingham.
- 5:00 to 7:00 Reception at the home of Dr. and Mrs. J. U. Reeves, 1862 Government Street. All members of the Association and the Auxiliary and guests of the Association are invited.

* * *

Thursday Evening

April 15

- 8:00 P. M. *The Major Neuralgias*—
Dr. Walter G. Haynes, Birmingham.

- 8:20 *Perforating Peptic Ulcer*—
Motion Picture: *Diagnosis of Peptic Ulcer*
Dr. Andrew B. Rivers, Mayo Clinic, Rochester, Minn.
- 9:05 *Adequate Care of Poliomyelitis*—
Dr. Robert L. Bennett, Director of Physical Medicine, Georgia Warm Springs Foundation, Warm Springs, Georgia.
- 9:35 *Psychosomatic Medicine*—
Dr. Henry B. Gwynn, Mobile.

* * *

The Second Day

Friday Morning

April 16

- 9:00 A. M. *Specializing in the General Practice of Medicine*—
Dr. Roy R. Kracke, Dean, The Medical College of Alabama, Birmingham.
- 9:20 *Surgical Treatment of Diverticulitis of the Colon*—
Dr. Virgil S. Counseller, Mayo Clinic, Rochester, Minn.
- 9:50 *Pediatric Hematology in Every Day Practice*—
Dr. Henry G. Poncher, Head of the Department of Pediatrics, University of Illinois College of Medicine, Chicago.
- 10:20 *Studies Using the Technique of Venous Catheterization*—
Dr. Eugene A. Stead, Jr., Department of Medicine, Duke University, Durham, N. C.
- 10:50 (1) Presentation to the Medical College of Alabama of a plaque honoring the Committee of the Association that worked to establish it.
(2) Recognition of the Fifty-Year Club. The Golden Anniversary in the Practice of Medicine.
(3) Announcement of Vacancies in the College of Counsellors.
- 11:00 The Jerome Cochran Lecture
The Gallbladder in Health and Disease—
Dr. Andrew C. Ivy, Vice-President, Chicago Professional Colleges, University of Illinois, Chicago.
- 12:15 Luncheon: The Alabama Radiological Society.

* * *

Friday Afternoon

April 16

- 2:00 P. M. *Common Problems in Plastic Surgery*—
Dr. Louis T. Byars, Assistant Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo.
- 2:30 *The Diagnosis of Ectopic Pregnancy*—
Dr. Frank E. Whitacre, Professor of Obstetrics and Gynecology, University of Tennessee College of Medicine, Memphis.

3:00 *The Management of the Treatment of Cancer of the Cervix—*

Dr. Edwin C. Ernst, President, American College of Radiology, Barnard Free Skin and Cancer Hospital, De Paul Hospital, St. Louis, Mo.

3:30 *Modern Methods in the Diagnosis and Treatment of Mediastinal Masses—*

Dr. Osler A. Abbott, Division of Chest Surgery, Emory University Medical School, Atlanta, Georgia.

4:00 to 5:45 Visit to the Bellingrath Gardens, arranged by the Mobile County Medical Society.

6:00 Alumni Banquet, Medical Department of the University of Alabama, Battle House Hotel. Alumni, ladies and visiting physicians are invited to attend.

7:30 Meeting of Counsellors and Delegates.

8:00 Scientific Session: Admiral Semmes Hotel.

* * *

Friday Evening

April 16

Battle House

6:00 P. M. Alumni Banquet, Medical Department of the University of Alabama, Battle House Hotel, Dr. J. Mac Bell, President of the Alumni Association, Presiding.

Greetings from the State Medical Association—

Dr. J. P. Chapman, President.

Address: Dr. Roy R. Kracke, Dean, Medical College of Alabama.

Address—Quest: Judge David H. Edington, Mobile.

In order to reach the Admiral Semmes Hotel in time for the scientific program at 8:00 P. M., please leave the banquet hall promptly on adjournment.

Admiral Semmes Hotel

8:00 P. M. *Diabetes in Relation to Other Medical Problems—*

Dr. Grady O. Segrest, Mobile.

8:15 *The Diagnosis and Treatment of Tumors of the Lymphoid System—*

Dr. John S. LaDue, Pack Medical Group, Memorial Cancer Hospital, New York.

8:45 *Atomic Energy in Its Relation to Biological Problems—*

Dr. Alexander Hollaender, Biological Division, Oak Ridge National Laboratory, Oak Ridge, Tenn.

9:15 *Treatment of Peritonitis, With Especial Consideration of Chemotherapy—*

Dr. Champ Lyons, Department of Surgery, Tulane University of Louisiana School of Medicine, New Orleans.

The evening's program will be followed by a reception and a dance at the Admiral Semmes, a courtesy of the Mobile County Medical Society.

The Last Day

Saturday Morning

April 17

Admiral Semmes Hotel

9:00 A. M. *The Functions of a Public Relations Program—*

Mr. Owen Cooper, Executive Director, Mississippi Farm Bureau, Jackson.

9:20 Business meeting of the Association sitting as the Board of Health of the State of Alabama.

(1) Report of the Board of Censors;

(2) Revision of the Rolls;

(3) Election and Installation of Officers.

Adjournment

* * *

OTHER EVENTS

The Alabama Association of Pathologists will hold its annual meeting in Mobile, Wednesday, April 14.

The Alabama Radiological Society will have a luncheon meeting at 12:15 P. M., Friday, April 16.

The Alumni Banquet of the Medical Department of the University of Alabama will be at 6:00 P. M., Friday, April 16, at the Battle House.

The Alabama Pediatric Society will hold its annual meeting on April 14 at the Admiral Semmes Hotel, beginning at 1:00 P. M.

As a part of the program of the Association, motion pictures may be shown between 8:00 and 9:00 A. M. each day in the Assembly Room.

PROGRAM

TWENTY-THIRD ANNUAL MEETING

OF THE

WOMAN'S AUXILIARY

TO THE

MEDICAL ASSOCIATION OF THE

STATE OF ALABAMA

The Battle House, Mobile

April 15, 16, 1948

President

Mrs. W. Frank Jordan Huntsville

President-Elect

Mrs. G. G. Woodruff Anniston

Vice-Presidents

Mrs. Walter H. Minor Mobile

Mrs. Erskine M. Chenault Decatur

Mrs. Euclid Isbell Gadsden

Mrs. W. J. Rosser Birmingham

Recording and Corresponding Secretary

Mrs. Thos. E. Dilworth Huntsville

Treasurer

Mrs. J. R. Chandler Bessemer

Auditor

Mrs. H. R. Cogburn Mobile

Historian

Mrs. W. M. McKissack Huntsville

Finance Officer

Mrs. R. E. Tyler Birmingham

Program

Mrs. J. Mac Bell Mobile

Advisory Committee

Dr. Geo. A. Denison Birmingham

Dr. J. P. Chapman Selma

Dr. E. V. Caldwell Huntsville

Dr. W. G. McCown Huntsville

Dr. Seale Harris Birmingham

Dr. Ormond R. Grimes Gadsden

Thursday, April 15

2:00 P. M.

Annual Executive Board Meeting

Mrs. W. Frank Jordan, Presiding

Friday, April 16

9:00 A. M.

BATTLE HOUSE**CONVENTION PROGRAM**

Call to Order—Mrs. W. Frank Jordan, President, Huntsville.

Invocation—Rev. E. L. Pennington, St. John's Episcopal Church.

Welcome Address—Mrs. J. Mac Bell, Mobile.

Response—Mrs. N. T. Davie, Anniston.

Memorial Service—Mrs. W. G. McCown, Huntsville.

Address—Rural Health—Dr. J. Paul Jones, Camden.

Message—Mrs. Olin S. Cofer, President, Woman's Auxiliary to the Southern Medical Association.

Reading of Minutes.

Annual Report of Officers:

President-Elect—Mrs. G. G. Woodruff, Anniston.

First Vice-President—Mrs. Walter H. Minor, Mobile.

Second Vice-President—Mrs. Erskine M. Chennault, Decatur.

Third Vice-President—Mrs. Euclid Isbell, Gadsden.

Fourth Vice-President—Mrs. W. J. Rosser, Birmingham.

Recording and Corresponding Secretary—Mrs. Thos. E. Dilworth, Huntsville.

Treasurer—Mrs. J. R. Chandler, Bessemer.

Historian—Mrs. W. M. McKissack, Huntsville.

Auditor—Mrs. H. R. Cogburn, Mobile.

Finance Officer—Mrs. R. E. Tyler, Birmingham.

President—Mrs. W. Frank Jordan, Huntsville.

Annual Report of Standing Committees:

Press and Publicity—Mrs. Warren C. Stephens, Mobile.

Public Relations—Mrs. N. T. Davie, Anniston.

Program—Mrs. J. Mac Bell, Mobile.

Hygeia—Mrs. Dan Coyle, Birmingham.

Lettie Daffin Perdue Scholarship Fund—Mrs. E. S. Sledge, Mobile.

Archives and Exhibits—Mrs. B. F. Caffey, Choccolocco.

Memorial—Mrs. W. G. McCown, Huntsville.

Jane Todd Crawford Memorial Scholarship Fund—Mrs. Ormond R. Grimes, Gadsden.

Bulletin—Mrs. G. W. Williamson, Bessemer.

Legislative—Mrs. J. U. Reaves, Mobile.

Revisions—Mrs. DeWitt Faucett, Gadsden.

Parliamentary Referee—Mrs. A. E. Casey, Birmingham.

Annual Report of County Presidents:

Calhoun—Mrs. N. T. Davie, Anniston.

Cullman—Mrs. Gordon Daves, Cullman.

Etowah—Mrs. W. E. Meneray, Gadsden.

Jefferson—Mrs. R. E. Tyler, Birmingham.

Mrs. J. R. Chandler, Bessemer.

Madison—Mrs. Pat Hamm, Huntsville.

Mobile—Mrs. A. D. Henderson, Mobile.

Morgan—Mrs. W. H. Block, Hartselle.

Report of Courtesy Committee—Mrs. Charles Rutherford, Mobile.

Report of Credentials Committee—Mrs. V. H. Hill, Mobile.

New Business.

Report of Nominating Committee.

Election of Officers.

Installation of Officers—Mrs. J. Mac Bell, Mobile.

Announcements by New President.

Reading of Minutes.

Adjournment.

* * *

Friday, April 16

1:00 P. M.

Luncheon Meeting, Battle House

Mrs. A. D. Henderson, Presiding.

Invocation—Rev. W. C. Cowart, Government Street Methodist Church.

Greetings—Mrs. W. G. Fonde, Mobile.

Response—Mrs. E. V. Caldwell, Huntsville.

Message—Mrs. Eustace L. Allen, President, Woman's Auxiliary, American Medical Association.

Address—Dr. Henry B. Gwynn.

Introduction of Guests and Officers.

Committees—

Hospitality—Chairman, Mrs. C. V. Partridge.
Co-Chairman, Mrs. C. M. Cleveland.Registration—Chairman, Mrs. J. C. Hope, Jr.
Co-Chairman, Mrs. John E. Moss.Transportation—Chairman, Mrs. J. D. Peake.
Co-Chairman, Mrs. M. Vaun Adams.

(Note—All doctors' wives are urgently requested to register at the Battle House Hotel desk for this luncheon.)

MEDICAL COLLEGE OF ALABAMA

CLINICOPATHOLOGICAL CONFERENCE

Reported by

Roger D. Baker, M. D.
Professor of Pathology

Conducted by

William H. Riser, Jr., M. D.
Associate Professor of Medicine

PRESENTATION OF CASE

Dr. Harmon Stokes, Resident in Hematology: A 61-year-old white male physician was admitted to the hospital four times between October 1945 and July 1947.

His chief complaint was "progressive back pain."

He had enjoyed excellent health until February 1945 when a ruptured appendix was removed. He recovered partially but never regained his strength. On several occasions during the next few months he coughed after severe exertion and raised flecks of blood, but this ceased. In October 1945 he experienced severe chest pain, cough and hemoptysis after spraying his house with a D. D. T. insecticide and was admitted to the hospital for the first time. The past history, family history, and review of systems were noncontributory. There was a bilateral limitation of respiratory movements and fine crepitant rales over both lung fields, most numerous over both upper lung fields and least numerous over the right lower lobe. An ectopic cardiac beat, about every fifth beat, was heard. A diagnosis of lobar pneumonia was made. The temperature went to 101.4°, and he was given penicillin. His temperature returned to normal by the next morning, and remained normal. After 4 days he was discharged.

After returning home he was incapacitated because of weakness for 2 months, and spent most of his time in bed. He became somewhat better and was able to return to work. In December 1946 he again contracted pneumonia. Thereafter he continued to have a severe cough, and with the cough felt as if there was a large mass ballooning out in his flanks. Slight pain was associated with this, and it increased in intensity. He was seen by several physicians and x-rays were taken. Abnormalities of the vertebrae were noted and he was again hospitalized.

On this admission there were: Blood pressure 130/80. Temperature 98.6°F. Pulse 84 per minute. Respirations 20 per minute. A soft, low-pitched, apical systolic cardiac murmur was noted. The rhythm was regular. There was pain on the crossed-leg test, but no other positive physical findings were recorded. The complete blood count gave: red blood cells 3,440,000, hemoglobin 10.5 grams (68%), color index 1.0, white blood cells 5,100, and the differential: 12 stab forms, 38 segmented forms, 1 eosinophil, 45 lymphocytes, 4 monocytes. Urinalysis: specific gravity 1.013; albumin, sugar and microscopic negative.

X-rays of the lower dorsal and lumbar spine showed moderate decalcification. There was anterior wedging of the bodies of D10, 11, 12, and L1, which gave the appearance of either old injury or postural kyphosis, rather than compression fracture or active disease of bone. Mild hypertrophic changes were noted throughout the lower dorsal and lumbar spines. A cystoscopic examination was performed, and revealed two plus enlargement of the median and both lateral lobes of the prostate. It was the opinion of the cystoscopist that this might be the cause of some of his symptoms. He was discharged with a diagnosis of hypertrophic arthritis and benign hypertrophy of the prostate.

After this hospital admission, the pain in his back increased in intensity. A brace helped very little, and he was unable to walk around because of pain, but the pain did not radiate down the legs. He developed a severe burning sensation in his epigastrium unassociated with meals. A gastrointestinal series was done, and a healing ulcer was found and also a small diaphragmatic hernia, according to the patient. Alkalis gave some relief from the epigastric burning. The pain in the back continued and on the advice of a physician he decided to have all his teeth removed. This was begun in February

1947 and he was getting along very well until he began to bleed from one of the sockets. He bled 29 hours, and the bleeding was finally stopped by cautery. He did not have further bleeding when the next few teeth were pulled, but shortly after this his hemoglobin was found to be 60%. He was given iron therapy and no more teeth were pulled until his hemoglobin reached 70%. He experienced very severe bleeding while the remaining teeth were being pulled, and in April 1947 was again hospitalized, this time for transfusions.

On the third admission there was no active bleeding from the gums. There was pain to fist percussion over and lateral to the lumbar spines. There was pain in both lumbar regions on walking. The remainder of the physical examination was negative. The clinical impression was: anemia, hypertrophic arthritis of the spine, peptic ulcer, and possible malignancy of the spine. The blood showed: red blood cells 2,760,000, hemoglobin 9 grams (58%), color index 1.03, white blood cells 3,350. The differential gave: 2 stab forms, 41 segmented forms, 53 lymphocytes, 4 monocytes. The urinalysis: specific gravity 1.008; albumin, sugar and microscopic were negative. Two transfusions of whole blood were given after which the patient's red count was elevated to 3.94 million, with 12 grams or 78% hemoglobin. He was discharged from the hospital with a diagnosis of secondary anemia, improved.

After being discharged the patient's back pains continued with such intensity that he was confined to bed most of the time. His epigastric burning became more severe and he was seen by another physician. A gastrointestinal series, a barium enema and a gallbladder series were again done. All of these were reported as negative. He returned home, but continued to have his severe back pains and continued to become weaker and weaker.

On June 20, 1947, physical examination showed anemia, pallor, thoracic kyphosis and marked tenderness on percussion over the thoracic and lumbar spines. The urine contained one to two plus albumin, but no Bence-Jones protein. The hemoglobin was 7.5 grams, the red blood cells 2,790,000, and the white blood cells 3,700. The serum proteins were 8.8 grams, and the A/G ratio

1/1.58. It was impossible to cross-match his blood because of the gelatinous serum. The blood urea showed 36 mgms. per cent. X-rays of the chest and head were negative. X-ray of the entire spine showed marked osteoporosis with compression of the bodies of the lower dorsal and upper lumbar vertebrae. A sternal marrow aspiration showed an increase in the number of lymphocytes. This was repeated and many plasma cells were noted in all preparations. He received two 500 cc. transfusions of whole blood, after which he felt somewhat improved. It was advised that he have deep x-ray therapy over his back.

Hematologic studies gave the following data: hemoglobin 7.5 grams (49%), red blood cells 2,760,000, color index 0.89, mean corpuscular diameter 7.5, packed cells volume 24, mean corpuscular volume 86, mean corpuscular hemoglobin 27, mean corpuscular hemoglobin concentration 31, reticulocytes 0.5. Platelets normal. White blood cells 5,900. Differential: 2 stab forms, 56 segmented forms, 40 lymphocytes, 2 monocytes. The red blood cells showed rouleaux formation as is seen in patients with high blood proteins. The myelogram gave: myeloblasts 1, neutrophils 20, eosinophils 0.5, basophils 0.5, lymphocytes 28.5, atypical mononuclears 6.5, plasma cells 28.5, myeloma cells 2, monocytes 31, megakaryocytes diminished, macroblasts 3, normoblasts 5, myeloid-erythroid ratio 12.5:1.

The urine showed: specific gravity 1.010, albumin negative, sugar negative, red blood cells rare; later specimen showed one plus albumin, but no Bence-Jones proteins. Serum proteins 13.3, albumin 2.7, globulin 10.6, A/G ratio 1:3.9. Serum fibrinogen 0.85 grams per cent.

X-ray of the spine showed a generalized osteoporosis with moth-eaten appearance of all the spine. There was a compression fracture of the bodies of T9, 10, 11, 12. In general, the ribs had the same moth-eaten appearance. Mild hypertrophic changes were also present in the lower dorsal and upper lumbar vertebrae. Overlying the right ilium there was a 3 x 4 cm. area of decreased density, with irregular sclerotic borders which had the appearance of destruction in this area. X-ray of the skull also showed a moth-eaten appearance.

He was given a transfusion and his red count was elevated to 2.93 million with 9.5 grams hemoglobin. He continued to have rather severe back pains which were only controlled by the use of narcotics. A series of deep x-ray treatments was completed July 21, 1947. The patient experienced considerable nausea and vomiting but the back pain subsided somewhat. He was discharged on July 22, 1947.

At home he was confined to bed. His lumbar pain appeared to be slightly decreased at first, but later returned with the same severity. He continued to have marked epigastric burning which was only partially controlled by alkalis. The back pain increased in severity and was controlled only by the liberal use of narcotics.

The terminal illness was characterized by fever, abdominal pain in the right upper quadrant, back pain, nausea, vomiting and epigastric burning sensation. The patient expired September 6, 1947.

CLINICAL DISCUSSION

Dr. Riser: I should like briefly to review some of the high points in the history and physical examination which would lead up to the correct diagnosis in this case.

This man was in the upper age bracket, 60 years old, and was sick for about 22 months. The onset of his illness apparently began with acute appendicitis but after that he never regained his normal strength. The onset of symptoms relating to the present illness began with a cough which was productive of blood-streaked sputum, and shortly thereafter there was onset of chest pain. It was difficult to localize the chest pain, but it seemed to be in the sternum and ribs. Hemoptysis occurred on many occasions. Bronchopneumonia was diagnosed on his second hospital admission because of chest pain and fever, but the temperature dropped to normal within 12 hours. It was significant that he had a normal blood count but albumin in his urine. Also, there were finely granular casts and few pus cells, leading one to believe there was involvement of the kidneys.

After this admission, he continued to get weaker. Later on he had a febrile illness and chest pain which was again diagnosed as pneumonia. This cleared up rapidly on penicillin therapy. We cannot be sure what this was. He continued coughing up blood-

streaked sputum. At this time he began having severe back pain, severe enough to interfere with walking and moving around. At this admission the patient had an anemia for the first time but no albumin in the urine. X-rays taken of the spine revealed generalized osteoporosis. In addition to osteoporosis, several vertebral bodies were collapsed so as to give the vertebrae a wedge shape, but there was no history of trauma. He was again discharged from the hospital. Soon he began having a burning sensation in his epigastrium associated with nausea and vomiting. He had all of his teeth extracted because of the disease of the spine and experienced abnormal bleeding, which is very significant. He was hospitalized for blood transfusions because of excessive bleeding from the tooth sockets.

Soon thereafter he went to another clinic and a sternal bone marrow aspiration was done. The bone marrow pattern revealed a significant increase in plasma and myeloma cells which is characteristic of the disease we are going to discuss. There was albuminuria, but no Bence-Jones protein. The total serum protein was high as a result of increased globulin. Blood urea nitrogen was elevated. Excessive rouleaux formation made it difficult to type and cross match blood for transfusions. X-ray studies showed the same changes as noted previously. At that time a diagnosis of plasma cell myeloma was made. All of his symptoms continued and increased in severity. Soon he was bedridden.

When I first saw him he presented the picture of a chronically ill man who was pale and had severe back pain. He complained of marked tenderness over all vertebrae, but especially in the lower thoracic and lumbar regions. There was a deformity of the spine and marked tenderness over several ribs to the right of the sternum. He had some neurologic changes in both lower extremities. At that time a severe anemia and abnormal rouleaux formation of the red blood cells was noted. This excessive rouleaux formation made all blood studies difficult. We gave him group O, Rh-negative washed red blood cell transfusions because we could not type his blood. Blood drawn for chemical tests coagulated even though the usual anticoagulant was added. We did a sternal bone marrow aspiration and there was ex-

tensive infiltration of the bone marrow with myeloma cells and plasma cells. This is characteristic of multiple myeloma. The total blood proteins had risen to 13.5 grams, showing a hyperglobulinemia. X-rays now showed characteristic punched out areas and moth-eaten areas in many bones typical of multiple myeloma. This was seen in the ribs and skull, and there was a large area in the right ilium. He was given x-ray therapy and supportive measures but did not obtain benefit from anything except narcotics to relieve pain. We should have used stilbamidine to control pain. Our clinical diagnosis at that time was multiple myeloma.

This case clearly demonstrates the difficulty in the diagnosis of multiple myeloma during the early stages.

USUAL FINDINGS IN MULTIPLE MYELOMA

86% pain
78% multiple bone lesions
73% elevated serum protein (hyperglobulinemia)
61% renal dysfunction
59% excess rouleaux R. B. C.
53% anemia
53% Bence-Jones protein in urine
41% myeloid immaturity
9% osteoporosis alone
26% osteoporosis
20% hypercalcemia
16% pathologic fractures
14% paraplegia, root pain
12% no bone abnormality by x-ray
12% tumor formation
10% myeloma cells, peripheral blood

In addition to these, epistaxis and gastrointestinal symptoms are very common. In 12% of the cases no abnormality in any of the bones can be demonstrated by x-ray.

The case just presented was characterized early by severe back pain, progressive anemia, loss of weight, progressive weakness, bouts of fever and chest pain, early osteoporosis with collapse of several vertebral bodies, prolonged bleeding following tooth extractions, progressive increase in the severity of the back pain, elevated total blood protein with high globulin, abnormal rouleaux formation of red cells and elevated blood urea nitrogen (36%). The sternal bone marrow studies showed that the patient had multiple myeloma, and later on x-ray pictures were typical of multiple myeloma.

There are certain atypical features in this case which may have been mislead-

ing. There were no bone tumors. Usually nodules can be felt on ribs and skull. Another atypical feature was the negative Bence-Jones protein. It is not always present in multiple myeloma.

In the differential diagnosis one should consider:

- (a) Osteomalacia which occurs in old-age groups.
- (b) Osteoporosis from disuse.
- (c) Hyperparathyroidism because of the multiple bone lesions.
- (d) Metastases to bone.
- (e) Gaucher's disease.

There are certain points of interest in this particular case. In 20% of the cases of multiple myeloma there is hypercalcemia. Also in relation to a high blood calcium there may be metastatic calcification in the soft tissues, arteries, kidneys, lungs and the fundus of the stomach. This man had gastric symptoms. Our final diagnosis at the time he left the hospital was multiple myeloma. I don't know the cause of the terminal illness.

(Picture shown.) This is a picture of the bone marrow in multiple myeloma and it is diagnostic of this disease. The most characteristic cell is the one with the double nucleus. Those are the ones classified as myeloma cells. The final diagnosis in this patient was an easy one but the early diagnosis was difficult, and I don't know how anyone can make an early diagnosis of myeloma without doing bone marrow studies.

Dr. Stokes. (X-ray films.) The lower thoracic spine shows osteoporosis or a thinning out of the bone. The lumbosacral spine shows marked osteoporosis and there is a moth-eaten area in the crest of the ilium. This was taken to show lower ribs because he had severe pain on the right. You can see generalized osteoporosis and a few moth-eaten areas. The skull shows a typical picture along the frontal and fronto-parietal regions. The films taken earlier than this show only osteoporosis.

PATHOLOGICAL DISCUSSION

Dr. Baker: At autopsy the external appearances were not remarkable. The urinary bladder was distended to the umbilicus and there were a few adhesions in the left pleural cavity.

The multiple myeloma involved the spine, ribs and wing of the right ilium. The tumor tissue was variegated red and white. In the spine the vertebral bodies were thinner

than normal, that is, the distance between the intervertebral bodies was decreased. The cortex overlying involved bones was very thin. No gross deposits of tumor were noted outside of the skeletal system.

In the rectum there was an ulcerated mucosal surface and the wall of the rectum was much thickened. In the left lobe of the liver there was a multiloculated abscess 3 cm. in diameter filled with greenish-yellow pus. The kidneys were of about normal weight and showed white radiating areas suggestive of scarring. The spleen was two to three times as heavy as normal. No peptic ulcer was found in the stomach or duodenum. A few small adenomatous nodules occurred in the prostate.

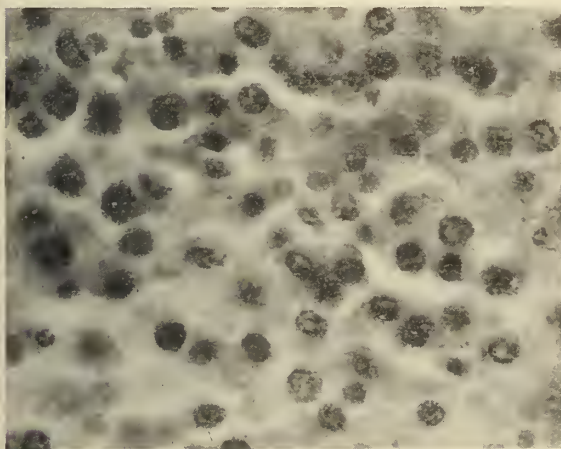


Fig. 1. Myeloma cells in case of multiple myeloma.

Microscopically, the myeloma cells were the same in all of the skeletal lesions. (Fig. 1.) They resembled lymphocytes and plasma cells and there was a paucity of the usual hemopoietic elements in these foci. There was essentially an absence of new bone formation around the tumor. Foci of microscopic size composed of myeloma cells were noted in the kidney.

In the kidney there were deposits of foreign material in the tubules, in the walls of tubules and between tubules which probably represented Bence-Jones protein which had been excreted sometime during the course of the disease. This had led to an inflammatory process and fibrosis. Some of the foreign substance occurred in glomeruli.

The rectum showed enormous masses of bacteria overlying a necrotic wall with some chronic inflammation deeper down. In the

abscess of the liver there were also masses of bacteria and it is my belief that the abscess of the liver was caused by the transportation of bacterial masses from the lesion in the rectum via the portal blood stream. The abscess of the liver contained pus and gave evidence of rather recent origin. In the lungs there was some coagulated protein in the alveoli indicating a certain amount of pulmonary edema. No lobular pneumonia was found in section.

ANATOMICAL DIAGNOSIS

Multiple myeloma
Interstitial fibrosis of kidney
Necrotizing prostatitis
Abscess of liver
Nodular hyperplasia, prostate
Arteriosclerosis, generalized, moderate
Cardiac hypertrophy, mild

What was the cause of the back pain? There seems little doubt but what this was due to the lesions in the spine and pelvic bones. The epigastric pain might be explained on the same basis, as referred pain. Certainly no peptic ulcer was found and no lesion other than the skeletal changes was present to explain the troublesome burning epigastric pain. What was the cause of the terminal fever? Apparently the abscess of the liver though of small size was sufficient to account for this and there may have been some fever because of the ulcerative proctitis. What was the cause of death? A non-protein nitrogen determined on blood taken at autopsy showed 244 mg.%. I believe, therefore, that the patient died in uremia and that this was chiefly due to the interstitial fibrosis of the kidney, which was in turn due to the abnormal deposits of Bence-Jones protein in the kidneys. It is possible that the nodular hyperplasia of the prostate played a role in the production of the uremia by obstructing the outflow of urine but the nodular hyperplasia was really of mild degree, and there was no hypertrophy of the bladder wall and no dilatation of ureters and renal pelves. I consider the distended bladder found at autopsy to be a terminal event.

Dr. Scott will analyze the several cases of multiple myeloma which have come to autopsy.

Dr. Walter F. Scott, Jr., Junior Resident in Pathology: We have reviewed the six cases of multiple myeloma that have come to

autopsy in the Jefferson-Hillman Hospital in the last 25 years and have tabulated the pertinent signs, symptoms and laboratory changes.

The average age was 57 years. The sex was five males, one female. The age incidence is about the same as that reported in larger series. The usual sex ratio in larger series is one female to three or four males.

By far the most frequent presenting symptom is pain. This occurred in 5 of our 6 cases, and in most series in the literature is reported to be the most common symptom. About 70% of patients have lumbar pain as the chief complaint and 20% chest pain. Fifty percent of the patients who complain of pain have the combination of both chest and lumbar pain. The character of the pain is much like that of arthritis of the spine. It is increased by motion, lifting, or unusual exercise, and the patient is frequently treated for arthritis for many months before multiple myeloma is suspected. In the literature weight loss is a symptom infrequently noted, but in our six cases four showed weight loss of 25 or more pounds in the several months before admission.

Skeletal changes as demonstrated by x-ray were seen in each of our cases. The cases reported in the literature showed roentgenologic changes regularly but the percentages of multiple and solitary involvement varied as did the ratio of typical to atypical lesions. In none of our six cases were the typical well-defined, punched-out areas of involvement of the skull, ribs or vertebral column seen. In one study of 40 cases, 60% of the roentgenologic changes were typical. The other 40% were described as hazy, diffuse and confluent osteolytic changes. These changes are more in keeping with those described by the radiologists who reported on our cases. All of our cases showed multiple involvement. Solitary involvement of the bones by multiple myeloma is rare and 70-80% of these, if followed long enough, will end in disseminated multiple myeloma. Geschickter and Copeland report that 60% of their 425 cases presented pathologic fractures. Later reports lower this percentage to about 20 or 25%. Three of our six cases presented pathologic fractures. Compression fracture of the vertebral column is not usually included among the pathologic fractures.

Three of our six cases demonstrated pathologic fractures other than compression fracture of the vertebral column. One case of particular interest was that of a carpenter who first noticed an abnormality while using a brace and bit, and while pressing against the brace with his chest noted a cracking sensation accompanied by sharp pain. This occurred four or five times in the 2 years of his illness. The longer cases are followed the more frequently will pathologic fractures be seen.

The laboratory change most frequently thought of by most physicians is probably Bence-Jones proteinuria, and the most frequent reason for not making the diagnosis of multiple myeloma is a negative Bence-Jones proteinuria. In 1929, when Geschickter and Copeland reviewed the literature and reported 425 cases, they found 65% to have Bence-Jones proteinuria. The probable explanation for this high incidence is that in earlier days Bence-Jones proteinuria was considered necessary for a diagnosis of multiple myeloma. In more recent reports, Bence-Jones proteinuria has been seen in 40-45% of the cases. Dr. Bradley Coley reported a series of his own cases in which the incidence was only 8%. It must be remembered that the excretion of Bence-Jones protein may be absent, constant or intermittent and frequently does not occur until very late in the disease. Often associated with Bence-Jones proteinuria is an albuminuria. Geschickter and Copeland reported that 70% of patients with multiple myeloma had an albuminuria of two plus or greater. Other reports ranged from 50-60%. Frequently the patient with multiple myeloma dies in uremia, and two explanations are offered for this: a blockage of the tubules by precipitation of the Bence-Jones protein causing oliguria and finally anuria, and second, multiple myeloma of the vertebral column with compression fractures and involvement of the nerves leading to a neurogenic bladder, causing secondary pyelonephritis. In the six cases from this Hospital 4 had Bence-Jones protein determinations, 3 of them on several occasions, but the determinations were always negative. Only one patient showed a two plus or greater albuminuria.

Until recently one of the least emphasized changes in multiple myeloma has been pro-

teinemia. The incidence of this has increased as its value has become better recognized. In a recent report of 83 cases there was an incidence of 73% of hyperproteinemia. Of course, the fraction increased is the globulin while the albumin is usually low. Early reports in the literature frequently had large series and hyperproteinemia was not mentioned. In 3 of our cases serum protein determinations had been performed and in 2 there was reverse ratio with the total amount elevated. Hyperglobulinemia accounts for other changes in multiple myeloma, namely the abnormal clotting of the blood, excessive greasiness noted when blood smear is made, excessive rouleaux formation and marked increase in the sedimentation rate. Bleeding tendencies, usually of the gums or nose, are likewise associated with hyperproteinemia.

All of our cases showed marked anemia, below three million, except the last one. Marked anemia, normocytic and normochromic in type, is one of the most frequent findings and is reported in 55-80% of the cases. The white blood cell count is usually low or low normal and there is a relative increase in the lymphocytes. Only occasionally are plasma cells or myeloma cells seen in smears of the peripheral blood.

The best laboratory procedure for the diagnosis of multiple myeloma is biopsy. When this is not possible, sternal puncture is almost as effective. It must be remembered that multiple myeloma grows in nodules in the marrow cavities and that the tumor area may be missed in a single sternal puncture. It is recommended that at least 3 punctures be done before multiple

myeloma is excluded. Of our 6 cases one was diagnosed by biopsy, and one by sternal puncture. At the time of autopsy the sternal marrow of all six cases presented definite involvement by myelomatous tumor.

Dr. Baker: Photographs of the lesions from a case of multiple myeloma which came to autopsy 3 months after the case of today are shown. (Fig. 2, 3, 4.) Both of these cases are included in Dr. Scott's analysis. A recent reference to multiple myeloma follows: Multiple Myeloma. A Survey Based on Thirty-Five Cases, Eighteen of Which Came to Autopsy: Lichtenstein, L., and Jaffe, H. L.: Arch. Path. 44, 207-246 (Sept.) 1947. Abstracted J. A. M. A. 135, 1174 (Dec. 27) 1947.



Fig. 3. Multiple myeloma. Arrows indicate the tumor bulging into the pleural cavities from lesions of the rib. From the more recent case.



Fig. 4. Multiple myeloma. Dark areas are myeloma nodules in rib and skull. From more recent case.



Fig. 2. Multiple myeloma. Lesions of vertebral bodies of spine are indicated by arrows. From a more recent case than the one presented.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

PERIL IN LYE POISONING

About a year and a half ago a person passing through a certain rural settlement in south Alabama would have witnessed a scene familiar to all in the antebellum South and not exactly a rarity now. An old Negro woman was 'tending to some "white folks"' washing which she had brought along when she came to look after her two grandchildren whose mother (her daughter) was at work in a field some distance away. The fire was going full force under the big pot in the yard, and the dirty clothes inside were getting a thorough scalding, which should have been enough to free the most stubborn dirt or grease. It was all hot work and would have been even if this had not been a hot August day.

The lighter garments were finished first. Then she placed the heavier work clothes in the pot and added more lye for the tougher cleaning job just ahead. Then she carefully placed the half-filled can between some tree roots to keep it from turning over and spilling.

She had her hands full. You may be sure of that. It's a full-time job to look after a pot full of dirty clothes, keep the fire going and see that no flying sparks light where they can set the house or barn on fire. As any mother, white or colored, knows, it's also a full-time job to look after two young children. One woman trying to do both simultaneously and satisfactorily really has her hands full. And, unless such a person is possessed of more than the normal amount of charitableness and patience, she is likely to complain and grumble just a little bit.

And that's what this old Negro mammy did. It made no difference that there was no one within earshot who could understand a word that she said. She just grumbled and grumbled, half under her breath. She complained, to no one but herself and those two children, too young to understand, about her misfortune in being called upon to act

as nursemaid when she had so much else to do. She thought about the children's mother, working in the field somewhere, and muttered that she ought to stay at home with her "chilluns" or take them with her. She remembered the five older children who were also off somewhere working: If their mother couldn't stay at home and look after these youngest ones, they ought to do it. But she reserved her most caustic complaints for the black-skinned toddlers themselves: They were always getting away from where she had told them to stay. Three times already she had had to leave her washing and get them out of something they had got into. Finally she corralled them into the yard and told them sternly that they'd better stay right there. If she had to go after them again, they'd be sorry.

Properly impressed and now quite obedient, they played quietly where and as they were told, and their grandmother went ahead with her washing. Not having to stop and chase after the youngsters made it much easier, and she worked faster. In a little while, it seemed, she was almost through. She needed just a little more lye in the water to finish the job. Then she could let the fire die out, hang out the clothes and get some rest.

But, alas!, there was to be no rest for her for a long time. Only trouble and anxiety for her and many others.

When she turned to reach for the half-filled can of lye, she heard a shrill scream and saw the can drop from the lips of the younger of these children, three and one-half years old. Ignorant as she was, she knew this product's lethal effects as well as any doctor. She could think of only one thing, and that was horrible: The child unwittingly had committed suicide.

But she had not handled lye all these years without knowing something about what should be done for lye poisoning. She seized the crying child in her ample arms, rushed with him into the ramshackle building that was the only home he knew, managed to find the vinegar bottle and, over his protests, made him drink a cupful of the

sour stuff. Having done a good first aid job, she left her patient there in the cabin and went out into the field to find and tell his father. Then one of the older children was found and sent in another direction to break the bad news to the mother. As soon as the frightened family finally got all together, it was decided to take the child to a doctor.

He told them to give the youngster more vinegar and also raw egg whites and milk.

Unfortunately, this treatment did not prove effective. For the next day the boy was feverish and would eat practically nothing. This last was entirely understandable when anyone looked inside his mouth, which was sore and swollen. But the mother wanted to do everything possible to help him get well and knew the best way to do that was to follow the doctor's instructions. So she stayed with the child, and, about once every hour, did her best to get him to swallow the vinegar, raw egg whites and milk. It was well-nigh impossible to get anything past that raw, swollen area for a while, but eventually it became somewhat easier. As time went on, that soreness gradually eased, but it did not entirely disappear, and no solid food could be taken.

About two weeks after the lye was swallowed, the mother became upset: Instead of improving, the child's condition appeared to be getting worse. She was particularly disturbed about that difficulty he was having with his swallowing. She really became alarmed when he reached the point where he could not swallow at all. Then he started crying, cried practically all the time and gave unmistakable evidence of being hungry. That caused the others to decide they should carry him to a hospital, although the expense was something these thrifty colored people did not like to think about.

Their troubles did not end with having a hospital bill facing them and a still dangerously sick child. It was an added misfortune that all this had to happen in August, when both parents and all the older children were badly needed in the fields to gather the crops. Unless they could get back to work soon, the harvest would be a failure, and they would go even farther into debt.

The hospital physician who examined the child said he needed to stay there where he could be under constant medical and nursing care. Expensive though this was it was done.

During all the time he was there, four weeks, he was fed through a tube. Then the parents were told how to feed him in this way, and he was allowed to go back home. But he did not do at all well at home and had to go back to the hospital after three days. Again the hospital physician inserted the tube and fed him. This time he spent six weeks at the hospital, being fed all the time through the tube. Then his throat closed completely. This was a bad sign. For it meant the child would have to have an operation. It was performed on his stomach, and he again was able to be fed through a tube. The family's slender savings having been exhausted and the hospital feeling that it had kept him without payment as long as it could, the parents had little choice but to take him home again. This was only four days after that serious stomach operation.

It was finally decided to send the youngster to a specialist in Birmingham in the hope that another operation would make it possible to open the esophagus. Encouraged by the specialist's hope that something could be done, he was admitted to the Jefferson-Hillman Hospital. But the attempt to pass a tube through the esophagus was a failure, as it was found to be completely closed. There was nothing to do but for him to go back to his dreary home.

His case was not rendered entirely hopeless by this disclosure, however. The hospital physician told the parents to take him back after another three or four years. That was last July.

Now, and presumably for at least the next three or four years, this young child can take nourishment only through a stomach tube. Not being able to eat like normal children and adults, he is deprived of the pleasure of tasting good food. And of course he is strictly limited in what he can take even in that unnatural way, because his diet still consists only of milk and eggs. That also imposes a great hardship upon his family, because it has no chickens and thus has to pay cash for the six eggs he requires every day. And the same is true of the milk he must have, for the family has no cow either. To compound his and his family's troubles, the Birmingham doctor prescribed a highly concentrated vitamin preparation, a pretty expensive medicine. And there is no money to pay for it. The result is that he has been

having to do without it, and his mother is worried because he is not looking as well as he did when he could take it regularly.

And how does this youngster's grandmother feel about the whole thing?

As you may well imagine, she is very unhappy about it. While she does not feel morally responsible for the youngster's drinking that lye and for the train of misfortunes which has followed, she realizes that, had she been just a little bit more watchful, everything would have been different, and many people would certainly have been happier. She says she really knew better than to leave the lye open like that with those two youngsters around and ready to get into anything they could but it had been such a long time since her own sons and daughters were babies that she simply forgot.

There are a few things, however, which neither she nor the others directly involved are likely to forget as long as they live. For one thing, there is the troublesome matter of those bills they owe the hospitals and doctors. The chances are, they fear, that they will never be able to get them paid as long as they live. Because of the heavy expenses which have had to be met with cash, all those in the family have had to do without things they really need, and, for that matter, are still having to do so. Food, clothing and elemental needs have had to be reduced to a point below the level of safety, with serious danger to health. It goes without saying that Christmas, an occasion of feasting and happiness for most of us fortunate Americans, must have been a pretty bleak, cheerless time for this family. And remember its troubles have not been of short duration. They began away back in August 1946. And remember, too, that their end, if there is an end to them short of the relief that comes to all troubles in death, will not come for three or four more years yet. Whatever relief that youngster will be able to get at the end of that long period will be paid for dearly with a major operation, which will involve considerable danger of a fatal outcome.

The case has been referred to the Crippled Children's Service of the Alabama State Department of Education, from which the writer obtained his information. So the family's financial burdens have been eased

substantially. But of course those expenses it incurred before the Crippled Children's Service took over are still there to haunt it.

Another case of this kind but, fortunately, less serious, was reported through the same channels from another county. Some older children, stirred by youthful curiosity, were carrying on some experiments with lye in the hope of making explosives. In their preoccupation with their tasks, they left the lye unguarded, and a two-year-oldster picked up the package and drank it. He was carried to the Touro Infirmary, in New Orleans. He is still under treatment, but, fortunately, can eat. It remains to be seen whether he will ever be completely well again.

The two incidents described and the many similar ones that could be mentioned if the facts were known have a compelling and challenging moral for all parents everywhere: Take no chances with this dangerous product. Keep lye away from children.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1947

	Nov.	Dec.	E. E.* Dec.
Typhoid	1	1	4
Typhus	7	8	41
Malaria	82	26	140
Smallpox	0	0	0
Measles	25	44	64
Scarlet fever	74	54	114
Whooping cough	126	145	92
Diphtheria	70	42	69
Influenza	271	447	532
Mumps	15	28	49
Polio-myelitis	0	1	4
Encephalitis	0	0	1
Chickenpox	19	127	107
Tetanus	6	2	2
Tuberculosis	256	187	218
Pellagra	2	5	7
Meningitis	6	7	6
Pneumonia	125	222	362
Syphilis	2433	1031	1347
Chancroid	18	14	15
Gonorrhea	719	463	464
Tularemia	4	4	1
Undulant fever	3	9	7
Amebic dysentery	0	0	0
Cancer	201	223	0
Rabies—Human cases	0	1	0
Positive animal heads	17	34	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

First tentative steps toward rehabilitation should be taken as soon as the patient's clinical status permits, and the period of hospitalization should be used to the fullest extent for purposeful activities directed toward the final aim of physical, psychic and economic rehabilitation.—*Max Pinner, M. D., Ed., Am. Rev. Tuberc., Aug. 1947.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND

DEATHS FROM CERTAIN IMPORTANT CAUSES

FOR OCTOBER 1947, AND COMPARATIVE RATES

FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During Oct. 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	7591	**	**	29.8	30.9	23.0
Stillbirths	210	**	**	26.9	27.3	26.5
Deaths, exclusive of stillbirths	2102	1251	851	8.2	7.7	8.1
Infant deaths:						
under one year	270	159	111	35.6	29.2	46.7
under one month	197	124	73	25.6	21.0	28.8
Typhoid and paratyphoid, 1, 2						0.4
Epidemic cerebrospinal meningitis 6					0.4	0.4
Scarlet fever 8						0.4
Whooping cough 9	6	1	5	2.4	0.4	2.4
Diphtheria 10	5	4	1	2.0	1.6	6.7
Tuberculosis, all forms 13-22	92	36	56	36.1	30.6	35.6
Malaria 23	1		1	0.4	2.0	0.8
Syphilis 30	18	10	8	7.1	8.6	11.9
Influenza 33	10	6	4	3.9	4.3	5.5
Polioomyelitis 36					1.2	0.8
Encephalitis 37	1	1		0.4		0.4
Typhus fever 39					1.2	1.6
Cancer, all forms 45-55	191	138	53	74.9	78.4	72.1
Diabetes mellitus 61	38	27	11	14.9	12.9	12.7
Pellagra 69	5	3	2	2.0	2.4	3.2
Alcoholism 77	3	2	1	1.2	0.8	0.8
Intracranial lesions 83	230	112	118	90.2	77.3	68.1
Diseases of the heart 90-95	456	309	147	178.8	169.8	182.6
Diseases of the arteries 96-99	20	14	6	7.8	7.8	13.1
Bronchitis 106	4	3	1	1.6	1.2	1.2
Pneumonia, all forms 107-109	79	45	34	31.0	31.8	32.9
Diarrhea and enteritis (under 2 years) 119	6	5	1	2.4	4.3	11.5
Diarrhea and enteritis (2 and over) 120	2	1	1	0.8	0.8	4.0
Appendicitis 121	8		8	3.1	2.0	2.4
Hernia and intestinal obstruction 122	19	10	9	7.4	2.7	7.1
Cirrhosis of the liver 124	15	12	3	5.9	3.9	3.6
Nephritis, all forms 130-132	153	83	70	60.0	51.8	59.0
Diseases of puerperal state 140-150	21	9	12	26.9	18.5	33.5
Puerperal septicemia 140, 142a, 147	7	5	2	9.0	8.6	8.4
Suicide 163-164	20	20		7.8	7.8	6.7
Homicide 165-168	51	18	33	20.0	13.7	13.1
Accidents, all types, 169-195	170	120	50	66.7	63.5	66.5
Motor vehicle accidents 170	67	42	25	26.3	25.5	23.8
All other known causes	356	227	129	139.6	128.6	133.5
Ill-defined and unknown causes 199,200	122	35	87	47.8	53.7	46.0

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths): from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the October report of the years specified.

**Not available.

Problems of the Rural Practitioner—The rural general practitioner's ingenuity is sometimes severely taxed to see that his patient gets the prescribed medical treatment rather than treatment by old charlatan ideas and superstitions. Most doctors now have repudiated bleeding and purgation as methods of therapy. Most laymen have forgotten the former method, perhaps because they could not carry out the technique nor endure the sight of blood; but with the aid of the radio they have "brushed up" on treatment by purgation.

In hospital treatment the physician is amused by some of the medical superstitions he encounters, but he dismisses them with a nod of the head and treats the patient according to his own dictates. In general practice these old, well established beliefs are not so easily brushed aside. Allow me to mention some of the superstitions which I have encountered in my own experience:

Warm urine instilled into the ear of a child will relieve earache; the juice squeezed from a fat bedbug into the ear canal is also good for this pain. "Sheep-ball tea" is administered to a child to "break out" the measles. Good treatment for a cold is to take a shoe string out of a dirty shoe, tie nine knots in it, and tie the string around the neck. Collard leaves are applied as a poultice to a breast abscess. There is no end to the various kinds of poultices used in pneumonia, colds, and bronchitis. When one walks into a room heated to about 90 F., with every door and window closed and every crack chinked, to find a small child well wrapped in an onion poultice, covered with several thicknesses of flannels, union suits and blankets, he is amazed sometimes to find that the parents do not want to expose the child by removing this covering even for a brief examination. He is allowed to auscultate a few square inches at the time, covering this area to expose a few more square inches of chest. On one occasion I was called to see a Negro man who had been treated for pneumonia for several days by the family and their medical advisers. Their diagnosis was right. The patient was comatose and dehydrated, with a temperature of 105 F. His entire chest was coated with a snuff-and-kerosene poultice, which had to be scraped off before an examination could be made.

I was once called to see two small children with whooping cough. After spending some time in giving general instructions as to the best care of the children, I began writing a prescription. The father stopped me: "Doc, if it's whooping cough I don't want no medicine. I know what'll cure it." "What's that, Rufus?" I asked. "Mare's milk, and I know where I can get some." The mother, who began crying when she was told that one child also had pneumonia, was comforted by the father, who said: "Shet your mouth, Rosie. If they die you can git you a job in that new hosiery mill."—*Dalton, North Carolina M. J., Jan. 1948.*

"Public health is purchasable. Within certain limits, a community may determine its own death rate."

BOOK ABSTRACTS AND REVIEWS

Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners: By Walter Arthur Bastedo, Ph. G., Ph. M. (Hon.), M. D., Sc. D. (Hon.), F. A. C. P., Consulting Physician, St. Luke's Hospital, N. Y.; St. Vincent's Hospital, Staten Island, and the Staten Island Hospital; President, U. S. P. Convention 1930-1940; Member Revision Committee, U. S. P.; Formerly Curator of the N. Y. Botanical Garden; Attending Physician, City Hospital, N. Y.; Instructor in Pharmacology, Cornell University; Associate in Pharmacology and Therapeutics and Assistant Clinical Professor of Medicine, Columbia University. Fifth Edition. Cloth. Price, \$8.50. Pp. 840, and 82 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

The publication of a new edition of Bastedo's *Pharmacology, Therapeutics and Prescription Writing* was made necessary due to the revision of the *Pharmacopeia* of the United States and the *National Formulary*, both of which took place in 1947, and to the tremendous advances in the field of chemical therapeutics which started with the use of sulfanilamide in streptococcic infections ten years ago. Since that date many other sulfonamide drugs have been developed and the field of their usefulness has been accurately defined on the basis of extensive clinical experience. The discovery of penicillin was the next step in the advancement of chemotherapy and the use of this drug in the treatment of syphilis brought closer to realization Parran's aim to wipe out syphilis. As a means of combating certain bacterial infections which did not respond to either penicillin or sulfonamides, streptomycin was developed and has broadened to a small degree the field of effectiveness of chemotherapy.

A better knowledge of nutrition has resulted in three important therapeutic uses for amino acids: the intravenous administration of amino acids to overcome hypoproteinemia when adequate protein cannot be taken by mouth, the treatment of toxic and infectious hepatitis with methionine, and the treatment of cirrhosis of the liver with choline.

The demonstration of histamine as a substance which mediates the vascular changes in allergy results in investigations to discover some substance which would destroy histamine or offset its effect. From this study came benadryl and pyribenzamine which have become well established as valuable therapeutic agents in the treatment of various allergic disorders. Histamine itself has been used in the treatment of certain types of headache and in some cases of Meniere's syndrome. Benzedrine sulfate was developed before the war and proved itself a safe and valuable drug when taken by flyers to keep awake during long raids. The drug is now being used chiefly for symptomatic relief in the depressive states. Many other discoveries made during war time have proved of value in civilian medicine.

A standardized extract of curare, available under the trade name of Intocostrin, has proved of value in preventing injury during shock therapy and in increasing relaxation during anesthesia and the manipulation of fractures. British Anti-Lewisite, more popularly known as BAL, has proved of value in the treatment of arsenical dermatitis and poisoning from heavy metals.

Attempts to lower the mortality rate for pulmonary embolism have resulted in the preparation of heparin and dicumarol which, after adequate clinical trial, have been shown to be of great value. Dilantin has proved its efficiency in the treatment of epilepsy, and tridione, despite its untoward effort, has established its value in petit mal. Folic acid has been found to be of great benefit in the treatment of various macrocytic anemias. Vitamin K has proved its importance in the prevention of hemorrhage in the newborn and in jaundiced states. Certain types of hemorrhages due to increased capillary fragility have been found to be amenable to Rutin.

The work of the chemists has made available pure glucosides, particularly of digitalis, which have many advantages over the crude extracts. Demerol has given us another drug to take the place of morphine in those individuals who show untoward reactions to the latter. Thiouracil and later propylthiouracil have shown such striking results in the treatment of hyperthyroidism that their discovery can well be considered the most important advance in the treatment of Grave's disease since Lugol's solution was first used as a preoperative medication in this disease.

Such an imposing list of scientific advances would make almost useless any textbook of pharmacology and therapeutics published prior to 1942.

C. K. Weil, M. D.

Gifford's Textbook of Ophthalmology. By Francis H. Adler, M. D., Professor of Ophthalmology, University of Pennsylvania Medical School. Fourth Edition. Cloth. Price, \$6.00. Pp. 512, with 310 illustrations. Philadelphia and London: W. B. Saunders Company, 1947.

Before his death, Doctor Sanford Gifford of Northwestern University wielded a great influence on the specialty of ophthalmology. This influence has been continued through this new edition of his *Textbook of Ophthalmology* which has been so ably revised by Doctor Francis H. Adler of the University of Pennsylvania Medical School. The original purpose of the book was to provide a textbook for medical students and general practitioners, rather than for specialists. This purpose has been maintained by Doctor Adler.

In reading this book, one is reminded of Doctor Charles H. May's *Diseases of the Eye* which has been so popular in this country and abroad. Doctor Adler's book is sure to be well received also.

Physiologic optics, the technique of refraction, and refractive errors are subjects of little interest to the physician who treats general diseases. The general practitioner will be pleased by the fact that Doctor Adler contributes less space to these subjects than does Doctor May.

It has long been recognized that a knowledge of ophthalmology is of value to any physician. And it must be recognized that many eye diseases must, of necessity, be treated by physicians who are not specialists. In this book, an attempt is made to make general practitioners aware of which eye diseases they may safely treat and which ones they should direct to an ophthalmologist. The details of any specialty are not of value or of interest to a physician whose attention is directed to the broad field of medicine and they are not included in this book. Although some of the subject matter in this book is perhaps beyond the needs of the medical student or the general practitioner, it serves as a valuable source of reference for them.

In the first chapter, the method of making a routine examination of the eye is outlined. Following this is the technique of examination by the ophthalmoscope, slit lamp, perimeter, tonometer, transillumination and other objective instruments. The diseases of the eye are covered in an orderly manner. A separate chapter is devoted to the diseases of each anatomic component of the eye. Special emphasis is made on ocular disorders which are due to general diseases and to diseases of the central nervous system.

Surgical operations on the eye and eyelids are described without giving the indications for the various types of operations or the details of the steps in the procedures. This chapter is well illustrated. The final chapter provides a list of the therapeutic agents most commonly employed in treating the eye. The references, all of which are to articles in current literature in English, are by no means complete but are sufficient for a book of this nature.

This book will be most appreciated by those who want a brief discussion of the diagnosis, pathology and treatment of an eye disease.

John Allen Jones, M. D.

A Primer of Cardiology. By George E. Burch, M. D., F. A. C. P., Associate Professor of Medicine, Tulane University School of Medicine; Senior Visiting Physician, Charity Hospital; Consultant in Cardiovascular Diseases, Ochsner Clinic; and Paul Reaser, M. D., Instructor in Medicine, Tulane University School of Medicine; Assistant Visiting Physician, Charity Hospital, New Orleans. Cloth. Price, \$4.50. Pp. 272, with 203 illustrations. Philadelphia: Lea and Febiger, 1947.

This little primer is intended for the beginner in cardiology but in the reviewer's opinion it lacks much in accomplishing its fundamental aim. Too frequently, it is assumed that the reader has a knowledge of certain anatomic or physiologic views and they are, therefore, skipped over rapidly. Diagrams are poorly drawn and often complicate rather than clarify the subject.

Though there are discussions of the cardiac silhouette as seen in the four classical views of the chest, there is no discussion of the appearance of the silhouette in even the commoner heart affections. In a discussion of the causes of edema, the authors bring out the fact that our modern physiologic explanation is inadequate, but certainly their discussion adds little to the clarity of the reader's understanding of this subject. In a discussion of the history to be taken on a cardiac patient, only two brief pages are devoted to the subject and in these pages no advice is given in regard to questions which might lead to some clue as to the etiology of the heart disease. In the discussion of the physical examination, the various heart sounds and murmurs and their appearance on the phonograph are given undue emphasis while, in the chapter on the cardiac arrhythmias, even the fundamentals of electrocardiology are ignored.

There are, on the other hand, some excellent descriptions in the book as, for example, the physiologic explanation for right-sided and left-sided failure, the definite evidences of cardiac disease, the grouping of various types of heart disease into etiologic classifications and the emphasis on the ability to make a clinical diagnosis without instrumental aid in cases of cardiac arrhythmias. This latter accomplishment is actually one which is acquired most readily by those who have used electrocardiograms the most and is hardly to be considered as within the realm of possibility for the beginner.

C. K. Weil, M. D.

Sexual Behavior in the Human Male. By Alfred C. Kinsey, Professor of Zoology, Indiana University; Wardell B. Pomeroy, Research Associate, Indiana University; and Clyde E. Martin, Research Associate, Indiana University. Cloth. Price, \$6.50. Pp. 804, with 173 charts and 159 tables. Philadelphia and London: W. B. Saunders Company, 1948.

Doctor Kinsey, Professor of Zoology, working with his associates at the University of Indiana under the sponsorship of the National Research Council's Committee for Research on Problems of Sex, has made a nine-year study of 12,000 sex histories and on the basis of information obtained from 5,300 white males has written a very dispassionate study of the sexual behavior of the human male residing in the United States. The facts obtained in this study are presented in a book of 800 pages. Much of the presentation is in the form of statistical tables but there is a tremendous amount of information dealing with what the male population does with no consideration of what they should do or with the moral or legal aspects of their behavior.

The average reader might be astonished to know that 85% of the U. S. male population has premarital intercourse, that 70% has had intercourse with prostitutes, that 40% of married males have extramarital relations, and that 37% of the male population has had or will have during their lifetime some homosexual experience. This is not a book intended for the casual reader;

but jurists, prison wardens, psychiatrists, urologists, gynecologists, neurologists and marriage counselors will find in it a vast amount of information in regard to the sex behavior of the human male. For example, there is much information on the subject of preadolescent sex play, age of onset of the various evidences of adolescence, age of first orgasm, the frequency of sexual outlet at various ages, and the methods through which sexual outlet is obtained. There is also much information in regard to details of the various outlets of sex urge, and the influence on sexual behavior of marriage, social level, education and rural versus urban background.

In the author's opinion the present moral attitude toward sexual behavior is based not on a scientific background but rather on the opinion of ancient jurists and theologians. They state that society must revise its opinion as to what is normal and what is abnormal in the field of sexual behavior. On the basis of the present standards of normality, a very high proportion of American adult males would be considered as definitely abnormal. Until the physicians themselves have come to distinguish between what is normal and abnormal, it is hardly expected that the legal point of view will have any scientific basis.

C. K. Weil, M. D.

A Manual of Clinical Therapeutics. A Guide for Students and Practitioners: By Windsor C. Cutting, M. D., Professor of Therapeutics, Stanford University School of Medicine, San Francisco, California. Second Edition. Cloth. Price, \$5.00. Pp. 712, with 30 illustrations. Philadelphia and London: W. B. Saunders Company, 1948.

Cutting's Manual of Clinical Therapeutics is a compact and practical guide to treatment which should prove of value to students, house officers and general practitioners. Despite its 712 pages, the manual is small enough to fit into a doctor's bag or his overcoat pocket or would take up little space on his desk. In whatever handy location it is kept, it will serve as a readily available source of quick reference when the treatment of a disease is being planned. Descriptions are brief and generally only a single accepted treatment is described. References are appended where more detail may be desired but only a single reference is given and these are usually limited to articles appearing in readily available journals, particularly the Journal of the American Medical Association.

In the nine appendices is contained much valuable information, including notes on drug poisoning and its treatment, commonly used diets, and a list of the important drugs recommended in the diet, their general uses, average dose and method of administration.

This is a well written book, practical in every aspect, and ideally suited to the use of the busy practitioner.

C. K. Weil, M. D.

Practical Child Guidance and Mental Hygiene. By Samuel Kohn, M. D., Ph. D., Adjunct Professor of Psychology and Psychiatry at Long Island University; Formerly Professor of Neurology and Psychiatry at Georgetown and George Washington Universities; Chief Psychiatrist, New Jersey and Delaware Induction Boards for the United States Army; Grace Kustin, A. B., and May Elish March, A. B., M. A. Price, \$4.00. Boston: Meador Publishing Company, 1947.

What an individual will be like when he is grown up depends very largely upon what happens to him in his infancy and early childhood within the confinement of his own home. The character and personality of the adult are based on early relations between the child and his parents. The nervous parent raises nervous children while the calm and understanding parent instills into his children the same sense of calmness. In childhood the neuroses have their beginnings and it is in childhood that much can be done to prevent them or to cure them when they are still in an early and versatile state. Any parent who is interested in trying to fit his children so that they may face life fearlessly and accept its disappointments cheerfully will want to learn the best methods of child training. One could rely upon the advice of neighbors, which is usually bad, or one could obtain from educators and psychiatrists a group of rules which have proved to be practical and to give good results. The application of the best of these rules is known as child guidance.

Unfortunately the authors have presented their material in a question and answer form which makes it difficult to look up any particular subject. For the parent it might be of definite advantage because nothing can be simpler than a question and answer presentation. The average professional man would prefer a more logical and consecutive arrangement of material.

The book is written primarily for parents but it is intended also for the use of educators, social service workers, physicians, lawyers and ministers. Of the professional groups, the reviewer feels that the pediatrician will probably find the book of value since in it he can find very satisfactory answers to some of the innumerable questions which are daily asked him by parents perplexed over the problem of how to raise their offspring.

C. K. Weil, M. D.

Adult types of pulmonary tuberculosis have shown an alarming incidence among children of school age in all of the war-torn countries; tuberculosis of bone and joints has increased many times; miliary tuberculosis and tuberculous meningitis in children are now common. In every children's hospital I visited I saw ward after ward of the victims of tuberculosis. In one small country, not atypical of others, I learned that to take care of the known cases of bone tuberculosis alone among children 7,000 new hospital or sanatorium beds were needed. They had only 500 when I was there.—Martha M. Eliot, M. D., *Am. J. Pub. Health*, January 1948.

AMERICAN MEDICAL ASSOCIATION NEWS

TREAT TUBERCULOUS MENINGITIS WITH STREPTOMYCIN, PROMIZOLE

COMBINATION BRINGS PROMISING RESULTS AT BELLEVUE HOSPITAL IN SIX OUT OF SEVEN CASES, DOCTORS REPORT

Promising results in the treatment of tuberculous meningitis by a combination of streptomycin and promizole, one of the sulfone drugs, are reported in the February 28 issue of *The Journal of the American Medical Association*.

Authors of the article are Edith M. Lincoln, M. D., Thomas W. Kirmse, M. D., and Estelle De Vito, M. D., New York, from the Chest Clinic of the Children's Medical Service, Bellevue Hospital, and the Department of Pediatrics, New York University, New York City.

Tuberculous meningitis is one of the clinical forms of miliary tuberculosis, and is much more commonly found in young children than in adults. It is an acute form of tuberculosis in which the membranes of the brain, sometimes of the cord, bear the brunt of the attack. Before the advent of streptomycin almost all cases terminated fatally—sometimes in a few days.

"Streptomycin has revolutionized our attitude toward tuberculous meningitis," the three doctors write. "Before this antibiotic was introduced, the outlook was hopeless. This serious prognosis has been modified by the use of streptomycin. Some patients have apparently been cured. But it is obvious from the literature that in some cases arrested by streptomycin, relapse and death have occurred; and some patients who survived have extensive residual neurologic damage.

"We decided to attempt the treatment of tuberculous meningitis by combining promizole and streptomycin in order to avail ourselves of the peculiar advantages each possesses. Promizole can be given orally and for a period of years with apparently no serious toxic results. It seems to have an inhibitory action on hematogenous tuberculosis, but clinical evidence of its action is usually delayed until at least six weeks after the drug is first given. Streptomycin acts more quickly but cannot be given orally and is more toxic; there is also evidence that

tubercle bacilli may develop resistance to it. Moreover, it has been shown in guinea pigs that the use of a sulfone and streptomycin together enhances their action beyond the expected value of either alone.

"Seven patients with tuberculous meningitis were treated with streptomycin and promizole. The first patient died after two months of treatment. Six patients are living three to eight months after treatment was instituted. They are all normal mentally and have no neurologic sequelae except for a mild degree of strabismus in one case and transient coarse tremors of the upper extremities in another case.

"No serious toxic effects of promizole were noted.

"Our patients have not been under observation long enough to report as cured, but we have six patients with tuberculous meningitis out of seven treated patients who have no pronounced neurologic damage and are normal mentally."

SAY INFLUENZAL MENINGITIS IS TREATED BETTER WITHOUT SPINAL PUNCTURE

Recovery from influenzal meningitis is more prompt and complications are fewer when treatment by spinal puncture is omitted, according to two doctors in the February 28 issue of *The Journal of the American Medical Association*.

The writers are Archibald L. Hoyne, M. D., and Rowine Hayes Brown, M. D., from the Municipal Contagious Disease and Cook County Disease Hospitals, Chicago.

Influenzal meningitis is a type of inflammation of the three membranes which envelop the brain and spinal cord. It is caused by an influenzal virus, but its symptoms resemble those of other types of bacterial meningitis.

Rare in adults, the disease was formerly almost universally fatal. The sulfonamide compounds, specific anti-influenzal serum and streptomycin have all made the picture more optimistic, but even today there is no standard accepted for their application. Many doctors still believe that numerous spinal taps for drainage are necessary even

after diagnosis has been established by spinal tap. Furthermore, when the National Research Council released streptomycin for treatment it advised that the new antibiotic be injected by spinal puncture.

The Chicago doctors' conclusion is based on a dozen years of experience in the treatment of meningitis. In their article they report specifically on 14 consecutive patients with influenzal meningitis treated at the County hospital in 1946 and 1947 and 16 consecutive patients treated at the Municipal hospital in 1946. There was only one death in each group, and in both of the fatal cases the patients had been given streptomycin by spinal puncture as well as intramuscularly. On the other hand, 23 of the 28 patients who recovered had received no treatment by spinal puncture after diagnosis. These 23 had been given streptomycin intramuscularly, had been treated with serum, or had received sulfonamide compounds—sometimes all three.

"The primary purpose for a lumbar puncture should be to establish a diagnosis," Dr. Hoyne and Dr. Brown conclude.

NURSES HANDLING STREPTOMYCIN MAY DEVELOP SENSITIVITY TO DRUG

Nurses, pharmacists, laboratory technicians and others concerned with the administration or handling of streptomycin are in danger of developing a sensitivity to the drug, three doctors state in the February 28 issue of *The Journal of the American Medical Association*.

The writers are Solomon M. Rauchwerger, M. D., Frederick A. Erskine, M. D., and Walter L. Nalls, M. D., from the Department of Medicine and Surgery, Veterans Administration, Oteen, N. C. They report that when over a period of 20 months streptomycin was administered to 233 patients in the tuberculosis hospital at Oteen, N. C., six nurses developed such a sensitivity. In every case the first symptom was a rash on the hands, followed by intense itching. Five of the six nurses also showed involvement of the area around the eye socket. Pyribenzamine proved more effective than benadryl for relief of symptoms.

DISINFECTANT ON HANDKERCHIEFS MAY HELP KEEP COLDS FROM SPREADING

Using a disinfectant on handkerchiefs might be one step toward preventing the

"common cold" from spreading, according to the London correspondent of *The Journal of the American Medical Association*, writing in the February 28 issue.

Reporting on a lecture by Dr. C. H. Andrewes, F. R. S., of the National Institute for Medical Research, on recent research on the common cold, *The Journal's* correspondent said that "some recent evidence suggested that more unpleasant germs were spread from the nose than from the mouth and throat, which led to the question whether bacteria and viruses accidentally shaken from handkerchiefs might not be of great importance. Tests showed that many bacteria might be shaken out and remain in the air. Handkerchiefs from the later stages of colds were found to be particularly effective as germ distributors. Work now in progress suggested that impregnation of handkerchiefs with a disinfectant might make them much less dangerous in this respect."

CITE FATAL CASE OF DDT POISONING

A case of fatal poisoning through accidental swallowing of a commercial DDT preparation is reported in the February 14 issue of *The Journal of the American Medical Association* by Nathan J. Smith, M. D., Department of Pathology, Veterans Administration Center, Wadsworth, Kansas.

The victim was a man of 58 who drank, accidentally, an insecticide which contained five per cent DDT. Within an hour he was suffering from severe gastrointestinal symptoms. They continued with increasing severity, and five days later he was admitted to the Veterans Administration Center in Wadsworth. Treatment proved futile and he died the next day.

At autopsy degenerative changes were found in the liver and kidney. When rabbits were experimentally poisoned with the same insecticide or given five per cent DDT in kerosene (another ingredient of the insecticide), the same effects were noted at autopsy.

"With the increasing use of DDT insecticides by the general public, it is not unlikely that occasional cases of poisoning from its accidental ingestion will be encountered," Dr. Smith warns.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

April 1948

No. 10

MANAGEMENT OF RINGWORM OF THE SCALP PRESENT STATUS OF THE EPIDEMIC FORM IN THE BIRMINGHAM AREA

JAMES S. SNOW, M. D.

And

IRVING D. LONDON, M. D.

Birmingham, Alabama

During the past few years there has been a great increase in the number of cases of tinea capitis in the large eastern cities, and in numerous communities this has reached epidemic proportions among the younger school children. These outbreaks have been found to be due chiefly to the fungus *Microsporon audouini*, which produces an insidious form of infection and has appropriately been called "epidemic ringworm of the scalp."^{1,2} This type is insidious because at first it produces only a little scaling of the scalp and very slowly a gradual loss of hair. It may exist for several weeks or even months in a child's scalp before it is noticed by his parents. During this time, however, it is infectious and consequently it is spread from child to child. Due probably to the large amount of travel and movement of families during and since the war, this type of tinea capitis has become disseminated throughout most of the United States and it is being seen in Alabama in increasing numbers.

In the past, most of the cases seen in the Birmingham area have been due to the so-

called animal type of infection. This occurs sporadically, being contracted for the most part by handling or playing with kittens or puppies infected with ringworm and is seldom spread from child to child. These sporadic cases are usually due to *M. lanosum* or sometimes *M. gypseum*. This type frequently produces more prominent lesions with rather rapid loss of hair and frequent secondary infection, which attracts the attention of the parents earlier. Another important difference is that the sporadic or animal type can be cured more easily than the epidemic or human type.

For the past year one of us (JSS) has routinely made cultures on Sabouraud's medium in all cases of tinea capitis seen in private practice in order to identify the causative organism. Twenty-four cases were seen during this period. Eighteen of these were found to be caused by *M. audouini*, which produces the epidemic form of this disease. Twelve of these children having the epidemic type lived in Birmingham; three were from Cedartown, Georgia and one each was from Clanton, Morris and Tuscaloosa, Alabama. Of the remaining six cases, five were found to be due to *M. lanosum* and one to *M. gypseum*.

This finding prompted us to discuss the problem with the other dermatologists in Birmingham and it was found that they were having a similar experience. Through the cooperation and courtesy of these col-

From the Dermatology Service of the Department of Medicine, The Medical College of Alabama.

1. Schwartz, Louis, et al.: Control of Ringworm of the Scalp Among School Children, J. A. M. A. 132: 58-62 (Sept. 14) 1946.

2. Steves, R. J., and Lynch, F. W.: Ringworm of the Scalp. Report of the Present Epidemic, J. A. M. A. 133: 306-309 (Feb. 1) 1947.

leagues* and the Jefferson-Hillman Clinic, an additional 69 cases seen during the past year were available for study. In 39 cases of this group the causative fungus had been identified and 29 of these had been found to be due to *M. audouini*. In addition to Birmingham, the patients with this type of infection were from Gadsden, Tuscaloosa, Enterprise, Leeds and Montgomery.

Combining this group with our own series gives a total of 93 cases of ringworm of the scalp seen and treated during the past year by Birmingham dermatologists. This is estimated as being at least two or three times the average number seen annually in the years immediately before the War. Of the 60 cases in which the causative fungus was identified, 47 cases (78 percent) were found to be due to *M. audouini*. This means that at the present time in Birmingham three out of every four cases of *tinea capitis* are the so-called epidemic type of infection; and that the increase in the total number of cases seen is made up chiefly of this type of infection.

DIAGNOSTIC PROCEDURES

1. Inspection.
2. Examination with Wood's light (black light).
3. Microscopic examination with sodium hydroxide preparation.
4. Culture for identification of the fungus.

All of these diagnostic procedures are necessary for the diagnosis and intelligent management of each case of ringworm of the scalp. In the epidemic type, inspection of the child's scalp in daylight gives only a rough estimate of the degree of involvement, and early cases will be missed entirely. Even after several weeks a little scaling and small areas, which appear moth eaten due to some loss of hair, may be the only visible evidence of the infection. In more advanced cases there are usually definite areas of loss of hair, with many broken off hairs which appear as black dots. In this epidemic type there is usually no inflammatory reaction at all and no crusting or ulceration.

Examination of the child's scalp with the Wood's light is of great aid in diagnosis and also in following the course of the infection.

*Drs. W. L. Poole, R. O. Noojin, P. G. Reque, R. J. Sherer and F. E. Stockton.

This so-called black light consists of ultra-violet light which is filtered through a dark cobalt blue glass.** The examination is made in a dark room and the hairs infected with fungus fluoresce brightly, making the infected areas of the scalp clearly visible. The fluorescence of the infected hairs is a characteristic bluish green color and can be distinguished from that of seborrhea or topical applications such as petrolatum.

Hairs for microscopic examination and for culture may be selected by their fluorescence with the aid of the Wood's light and removed with forceps, or in good daylight short, broken off hairs may be selected. Several such hairs are placed on a glass slide, a few drops of sodium hydroxide solution (20%) are added and a cover glass is applied. In about 30 minutes the preparation is ready to be examined microscopically and infected hairs are found to have characteristic chains of spores in and about the hair roots which are diagnostic.

In order to identify the type of fungus infection present, a culture on an appropriate medium, such as Sabouraud's, is necessary. Carefully selected hairs are planted on test tube slants and these are incubated at room temperature for 10 to 21 days, by which time characteristic colonies develop and can be studied. The identification of the causative fungus is especially important in *tinea capitis* because it has been found that infections produced by *M. audouini* (the epidemic type) are extremely difficult to cure except with the aid of epilation of the scalp with x-ray therapy. Most of the other types can be cured by vigorous topical medication and merely clipping the hair off the scalp.

MANAGEMENT

The average case of epidemic ringworm of the scalp is brought to the physician when the parents notice one or two coin-size areas of loss of hair and some scaling of the scalp. When such a case is examined in a dark room with the Wood's light, extensive small fluorescent areas are usually found throughout the scalp indicating additional widespread infection. Since the cooperation of the mother is very important in treating

**The inexpensive General Electric or Westinghouse Purple X bulb is a good substitute for the usual Wood's light.

this disease, it is helpful to demonstrate to her the extent of these active lesions.

If the microscopic examination of hairs is also positive for ringworm, it has been found advisable to clip off the hair of the entire scalp. This is done in the office and if possible it is done on the first visit. In the case of girls it is often difficult to obtain the consent of the mother to do this, but any other policy as a rule results only in loss of time.

Since the two types of ringworm of the scalp differ in their response to topical therapy, it is advisable to await the outcome of the culture before deciding whether x-ray epilation should be done. This requires about 10 to 14 days. During this time the mother is instructed to shampoo the child's scalp once a day and to rub in thoroughly twice a day an ointment such as 5% ammoniated mercury ointment or one of the new preparations such as 5% salicylanilide or 10% copper undecylenate in Carbowax.† The scalp should be kept covered with a stocking cap in order to keep the ointment in place and to prevent infection of other children. It is well to have all other children in the family, as well as the neighbor's children, come in for examination with the Wood's light.

If the culture shows the organism to be due to *M. lanosum* or other animal types, this program is continued. The scalp is clipped at 10 day intervals and the ointment is applied over the entire scalp twice a day. The hair can be clipped in the office or the parents can obtain a pair of clippers and do it at home. Other suitable prescriptions include: (1) 5% ammoniated mercury ointment with the addition of 2% salicylic acid, and (2) 5% sulfur precipitate and 2% salicylic acid in petrolatum. The progress of the infection is followed by periodic examination with the Wood's light. When this regimen is carried out carefully, a cure is usually obtained in from 9 to 12 weeks.

On the other hand, if the fungus is found to be *M. audouini*, the epidemic type of infection, epilation of the entire scalp hair with x-ray therapy should be carried out without delay. This is done by giving 300 to 350 roentgens of unfiltered x-ray to each

of 5 ports, according to the Keinbock-Adamson technique. This produces defluvium of the scalp hair in about 3 weeks.

Most of the hair comes out spontaneously and the remainder can be easily pulled out with adhesive plaster or forceps. All removed hair should be disposed of carefully. Local medication is continued as outlined above and the progress of the infection is followed at 10 day intervals with the Wood's light. A cure is usually obtained in about 3 months after the x-ray is given and hair of normal texture grows back in about 6 months.

COMMENT

An interesting point about ringworm of the scalp is that it seldom if ever occurs in the scalp of an adult person. In older children it has been found to clear up spontaneously as the child reaches puberty or soon thereafter. This fact is very reassuring to the mother of a child with the infection as she is usually apprehensive about her own scalp while carrying out treatment for the child. She may occasionally contract a simple ringworm of the smooth skin, for instance of the arm, which can be quickly cured by the usual means but she can be assured that she will not get an infection of her scalp.

The epidemic type of *tinea capitis* has been found to occur chiefly in boys, the ratio to girls being 4 or 5 to 1. This has been attributed, at least in part, to spread of the infection in barber shops which small boys visit more often than girls. The first lesions are frequently noted on the sides and back of the head in the clipped area, and the infection is thought to be spread by the electric clippers and brushes. The usual mode of sterilization used in barber shops is not adequate to kill the spores of ringworm as they occur in infected hairs. Barbers should be instructed regarding the benign appearance but insidious nature of early ringworm infection of the scalp and they should be on the alert for any sign of it in their young patrons. If there are any suspicious lesions present, the barber should either refuse to cut the child's hair or he should use a separate, complete set of instruments which can be soaked in a strong lysol solution for at least one hour.

Another mode of transfer has been found to occur in theatres. Small children like to

†Salinidol Ointment (Doak & Co.); Salicylanilide-Phemerol Cream (Park-Davis Co.) or Decupryl (Crooks Lab.)

sit up in front and their heads naturally rub against the back of the seat while looking up at the screen. In communities where there is an active epidemic of scalp ringworm, pathogenic fungi have repeatedly been cultured from the backs of theatre seats, especially those in the front part of the theatre. Another important means of transfer is of course the direct contact of children in playing at home and at school and in the exchanging of their caps.

Attendance at school can usually be permitted provided the infected child is under active therapy and is using a fungicidal ointment over the entire scalp. He should keep the head covered at all times with a stocking cap when with other children.

Although the findings of this report are not alarming at the present moment, we do feel that it should be brought to the attention of all physicians in the state that cases of the epidemic form of ringworm of the scalp are being seen in increasing numbers in several communities of the north Alabama area. By being on the alert for the occurrence of this infection and by making sure that all cases are promptly treated, it is hoped that the situation can be controlled and a more serious outbreak can be avoided. This will require the cooperation and alertness not only of physicians and parents but also of teachers, school nurses, and even barbers. In addition to these measures it is suggested that tinea capitis be made a reportable disease. If this were done all cases could then be studied epidemiologically through the central office of the Health Department of each town or city. Another mode of study would be to instruct a school nurse in the use of a Wood's light and have her examine all children in each class where there is a known case. This type of survey has been found very valuable in case finding, which is so important in controlling the spread of this disease.

SUMMARY

1. The epidemic type of ringworm of the scalp is occurring in children of Birmingham and surrounding communities. This type is more infectious than the sporadic or animal type and is more difficult to cure, usually requiring x-ray epilation.

2. Out of 24 cases of tinea capitis treated in private practice during the past year, 18 cases were found to be due to *M. audouini*,

which is the causative fungus of this epidemic type.

3. Consultation with the other dermatologists in Birmingham reveals that the number of cases of tinea capitis treated during the past year is three to four times that seen before the War and that this increase is due to the epidemic type of infection.

4. The treatment and management of ringworm of the scalp is discussed, emphasizing the value of examination with the Wood's light, culture for identification of the fungus, and the use of new therapeutics as well as x-ray epilation.

5. By careful examination of all school and preschool children and the thorough treatment of all cases, it is hoped that a more serious outbreak of this condition may be prevented.

1318 Comer Building

Occupational Dermatoses—The first two objectives of treatment are symptomatic relief for the patient and the removal of the patient's skin from the irritating exposure. The use of soap and water is to be avoided except in the period immediately following harmful exposure, when it may be useful to remove the offending agent. Chemical neutralizers are occasionally indicated, as in the case of burns with an acid or alkali. Potassium permanganate is sometimes useful when an oxidizing agent is indicated. Before applying *any* local medication, however, one should remember that the skin has already been damaged, and may not tolerate what it normally would.

In the acute, vesicular eruptions mild, cool wet dressings with boric acid solution, isotonic salt solution, Burow's solution in a 1:15 or 1:30 dilution, or a 1:5,000 dilution of potassium permanganate are usually soothing and healing. In a dry, acute eruption calamine lotion or plain zinc oxide paste may be used. In the subacute or chronic periods, ointments containing 2 to 5 per cent ichthammol or naftalan are useful. If secondary infection is present, wet dressings should be used first, followed by a mild mercury ointment, or ichthammol. After many chemical irritations, a minimum period of two weeks is required by the skin before active healing is noticeable; therefore the physician should not be in a hurry to change to stronger measures every few days. The routine use of sulfonamide or penicillin ointments is inadvisable because of their sensitizing properties.

Internal treatment is occasionally indicated—for example, in the chronic or extensive cases. Mild sedation may be temporarily necessary in severe, acute cases; Benadryl or Pyribenzamine is sometimes effective, but perhaps chiefly because of the sedative effect.—*Welton, North Carolina M. J., Feb. '48.*

COMPLICATIONS OF SINUSITIS

WITH PARTICULAR EMPHASIS ON OSTEOMYELITIS OF THE FRONTAL BONE

L. C. BLEIDT, M. D.

Birmingham, Alabama

With the advent of the sulfonamides and antibiotics, the complications of sinusitis have been markedly decreased. However, occasional complications occur, and due to the serious nature of some of them a discussion of their management is warranted. The present paper pertains primarily to the complications of acute sinusitis or exacerbations of chronic sinusitis. The subject has been classified as follows:

I. Orbital Complications.

II. Intracranial Complications.

Orbital and ocular complications may arise in connection with suppuration of both the anterior and posterior group of sinuses. The anterior group, composed of the frontal sinus, anterior ethmoid cells and maxillary sinus, is contiguous to the roof, the medial wall, and the floor of the orbit. The posterior group, consisting of the sphenoid sinus and the posterior ethmoidal cells, is in relationship to the posterior half and the medial wall of the orbit and to the optic foramen. In consequence of the close anatomic relationship, there may arise, as the result of suppuration in the anterior group of air cavities, orbital periostitis and abscess. Suppuration in the posterior group of sinuses may, also, give rise to subperiosteal orbital abscess, but more frequently the complications are retrobulbar neuritis, optic atrophy and paralysis of ocular muscles.

I. Orbital Infections

(1) Etiology

The condition is not common but occurs most frequently in children and young adults, probably because of the thin bone, the narrow nasal cavity and the tendency to severe infection with virulent organisms. It occurs during acute sinus infections and in acute exacerbation of chronic disease, and after swimming and diving, and such infectious diseases as influenza and scarlet fever. The bacteria responsible are the

hemolytic streptococcus and *Staphylococcus aureus*.

The infection spreads from the sinus to the orbit by direct extension through the bony separating wall, or by phlebitis of mucosal veins which empty into the ophthalmic veins. The frontal sinus is most often responsible, perforation taking place through the thin frontal floor. The ethmoid cells may perforate through the lamina papyracea. In rare instances the antral roof or the lateral wall of the sphenoid may be penetrated by infection.

(2) Symptoms

Simple edema of the orbit is marked by orbital pain, a rise in temperature, and the appearance of a dusky red, soft edema of the lids without impairment of motion of the globe, and with no change in vision. If a subperiosteal abscess forms, the edema of the lids increases and becomes hard, red and tender, with increased pain and higher fever. Movement of the eye is painful and limited, and the globe is displaced downward and forward when the frontal floor ruptures; and downward, forward, and outward when the lamina papyracea is the site of perforation. When pus forms in the orbit there is very marked exophthalmos, extreme chemosis of the conjunctiva, immobility of the globe, interference with vision, septic fever, and marked illness. Severe cellulitis, with phlebitis of the ophthalmic veins, is indicated by similar symptoms, with fever to 105 degrees F. or more, chills and headache. The cavernous sinus may be involved.

The occurrence of these symptoms, in the presence of acute sinusitis with pus in the nasal cavity, suggests the diagnosis. The differential diagnosis must be made from inflammatory conditions caused by direct trauma, orbital neoplasm, syphilitic gumma, periostitis, orbital hemorrhage, cavernous sinus thrombosis, and exophthalmic goiter.

(3) Treatment

Simple edema of the orbit calls for conservative treatment, with shrinkage of the

nasal cavity by repeated ephedrine sprays, cold compresses to the eye, and adequate doses of penicillin.

In a recent article, Steffensen¹ states that if orbital edema does not subside promptly after adequate chemotherapy and intranasal measures to facilitate drainage, it is better not to delay surgical treatment. He points out the difficulty in differentiating simple orbital edema from abscess but finds that in most instances the brawny swelling of the lids and conjunctiva, the severe pain, and the displacement of the bulb are indication of pus formation. In his opinion all cases of suspected orbital abscess should be explored through an external approach such as the Lynch or Ferris-Smith operation. By this method adequate access is obtained not only to the subperiosteal accumulation of pus but to the primary focus in either the frontal or ethmoid sinus. Morrison² also believes that orbital abscess demands an external incision with elevation of the periosteum and drainage of the abscess. Radical sinus surgery is deferred until after the acute symptoms have subsided. Fortunately, with the use of penicillin and intranasal drainage, I have seen very few orbital complications that required surgical drainage.

II. The Intracranial Complications of Sinus Disease

(A) Osteomyelitis of the Skull

Osteomyelitis following maxillary sinusitis is rare. This is due primarily to the difference in the bony framework and venous drainage of the maxillary and frontal sinuses. The frontal sinus is the only sinus with veins draining directly into the venous sinuses in the brain. Also, the nature of the diploic bone spaces found in the frontal bone encourages the spread of infection.

Mosher³ states that osteomyelitis of the frontal bone is one of the most dreaded of surgical diseases and one of the most fatal. According to Mosher the disease occurs as two types. These are the fulminating, rapidly spreading form, of which swim-

ming is a frequent cause, and the less virulent localizing form which tends to burn itself out and form sequestra. The organism in osteomyelitis of the frontal bone is *Staphylococcus albus* or *aureus* and occasionally the streptococcus. If the patient is septic, with pitting edema of the skin of the forehead half way to the hair-line or at the hair-line as often happens, he considers this the fulminating type. Mosher makes the following statement: "Not having second sight, I cannot pick the case in which it is safe to operate conservatively and do what might be called a minor operation and hope for sequestration. I am not slipping into the grand manner when I say that on the tissue and the type of operation which the surgeon elects hangs the life of the patient."

The veins of the mucous membrane of the frontal sinus are continuous with the diploic veins of the frontal bone. The infection originates in the frontal sinus and is carried to the frontal bone by the diploic veins. The branches of these veins run to the periosteum and cause edema of the periosteum and skin. They also carry the infection to the dura, and the dura seems to attract the infection even more strongly than the periosteum. If the infection is halted by a thrombus sufficiently long at any given point, there is necrosis of the bone and the formation of a sequestrum. If the edema extends to the hair-line, as it generally does in a fulminating case, the infection in the bone marrow has advanced to the same point. The x-ray examination is positive only after necrosis has begun, and it is not positive until from 7 to 10 days after the onset of the pitting edema. From the surgical standpoint these are the days of hopeful surgery. If an area of necrosis is shown by x-ray examination or is found at operation, the microscopic examination of numerous specimens of bone in such cases has shown that the bone is actively infected from 1½ to 2 inches beyond the necrotic area. The progress of the infection along the veins which are chiefly infected can be watched by means of the x-rays.

In treatment of osteomyelitis of the frontal bone, Mosher warns the operator to be on the look out for a subdural abscess or a brain abscess. He advises in all cases of fulminating osteomyelitis that the whole face of the frontal bone be removed from the

1. Steffenson, W. H.: Sinusitis, Orbital Complications, J. Mich. Med. Soc. 40: 30, January 1941.

2. Morrison, W.: Diseases of the Nose, Throat and Ear, Philadelphia, W. B. Saunders Company, 1938.

3. Mosher, H. P.: Osteomyelitis of the Frontal Bone as a Complication of Frontal Sinusitis, J. A. M. A. 115: 14, 1940.

hair-line to the eyebrow as a routine procedure. Also, he advises that both frontal sinuses be opened, and the anterior and posterior walls of each sinus removed. In some patients, who are in poor condition, it is permissible to work from the necrotic area outward; the bone being removed 1 to 1½ inches in all directions from the necrotic area. The lateral limit of the bone flap on each side should be at least to the outer angle of each frontal sinus, or, better, the outer angular process of the frontal bone on each side.

Jones⁴ agrees with Mosher's radical treatment but uses the coronal incision rather than the inverted "T" type of incision as he feels it is less deforming. In the management of these cases Lierle⁵ also recommends investigation of the dural plate of the frontal sinus and at the same time the removal of pathology in the ethmoid and sphenoid sinuses. Skillern⁶ points out the direct communication between the frontal sinus and the dura through the posterior plate and emphasizes that this is the only sinus whose veins drain directly into the large blood sinuses in the brain. He advocates immediate radical surgery in all cases of acute osteomyelitis of the frontal bone. Boies⁷ advocates a simple trephine drainage in those cases of acute frontal sinusitis in which drainage has been inadequate after conservative therapy. He has found this method useful in the prevention of osteomyelitis.

An opposite view is taken by Skillern⁸ who finds too many cases of osteomyelitis following the trephine operation. Radical surgery is advised when an operation is necessary. Boies feels Skillern's poor results with the trephine operation is due not only to making the trephine through the anterior wall instead of the floor of the

frontal sinus but also to a prolonged period before attempting surgical drainage.

Williams⁹ has found that sulfonamides give a false security in osteomyelitis of the skull secondary to sinusitis. In his opinion both sulfonamides and penicillin should be given because of the synergetic effect. With the use of both drugs, extensive removal of bone can be done and the wound closed tightly with only superficial drainage.

Mothersill¹⁰ also feels the optimum time for operative measures in acute spreading osteomyelitis is during the period when the infection has been checked by penicillin. In his experience, attempts to depend solely upon penicillin without the aid of surgery have been disappointing.

Again I would like to emphasize the importance of early treatment of acute frontal sinusitis. Intranasal drainage of the involved frontal sinus is imperative. I have found the use of vasoconstrictors by the displacement method of Proetz an excellent means of obtaining drainage. Adequate doses of both penicillin and the sulfonamides should be given.

B. Abscess of the Frontal Lobe of the Brain

Abscess of the frontal lobe of the brain frequently complicates osteomyelitis of the frontal bone. Necrosis of the posterior wall of the frontal sinus occurs due to the vascular thrombosis and destruction of blood supply. An extradural abscess forms, and the arachnoid and pia mater becomes adhered to the dura mater and the surface of the brain. As the infection spreads inward, subdural abscess forms and a focus of infection is set up within the white matter of the brain.

In a recent report, Schultz¹¹ again brings out the necessity for a thorough investigation of the frontal sinus when attempts to obtain intranasal drainage have failed. In cases of subdural empyema following frontal sinusitis, adequate drainage of the subdural space through multiple burr holes is recommended. Cooperation between the

4. Jones, A. C.: Osteomyelitis of the Frontal Bone (Abstract Discussion, Mosher's Article) J. A. M. A. 115: 14, 1940.

5. By Direct Communication with Dr. D. M. Lierle, University Hospitals, Iowa City, Iowa.

6. Skillern, S. R., Jr.: J. Internat. Col. Surg. 8: 308-312, July-Aug. 1945.

7. Boies, L. R.: Acute Frontal Sinusitis; the Trephine Operation for Drainage in Selected Cases, Laryngoscope 458-465, June 1942.

8. Skillern, S. R.: Osteomyelitis Invasion of Frontal Bone Following Frontal Sinus Disease, Ann. Otol., Rhin. & Laryng. 48: 392-411, June 1939.

9. Williams, H. L.: Chemotherapy in Otolaryngology, Wisconsin M. J. 44: 507-511, May 1945.

10. Mothersill, M. H.: Penicillin and the Infections of the Ear, Nose and Throat, Ann. Otol., Rhin. & Laryng. 54: 1166-1173, March 1945.

11. Schultz, E. C.: Subdural Empyema of Frontal Sinus Origin, Ann. Otol., Rhin. & Laryng. 55: 882-890, December 1946.

rhinologist and neurologist is advised, especially when the patient's symptoms cannot be explained on the basis of a pure sinusitis.

In conclusion, I wish only to mention the occasional occurrence of diffuse suppurative leptomeningitis and cavernous sinus thrombosis as complications from acute disease of the paranasal sinuses. Recently,¹² with the use of penicillin and heparin, the treatment of cavernous sinus thrombosis has been more encouraging.

SUMMARY AND CONCLUSIONS

The medical and surgical management of sinus complications has been presented. The seriousness of acute frontal sinusitis com-

plicated by osteomyelitis has been emphasized. Personal experience and review of the literature are the basis for these conclusions:

1. Early intranasal drainage and the use of both penicillin and the sulfonamides is indicated in acute frontal sinusitis.

2. Those cases of acute frontal sinusitis that fail to respond to medical management should have surgical drainage by the simple trephine method.

3. Statistics have shown that, with adequate chemotherapy and early trephine drainage of the frontal sinus, the incidence of osteomyelitis of the skull has been decreased.

12. Welty, R. F., Bacterial Thrombophlebitis of a Cavernous Sinus with Recovery, *Arch. Otolaryng.* 43: 70-72, Jan. 1946.

13. Ballenger, W. L., & Ballenger, C. B.: *Diseases of the Nose, Throat and Ear*, Philadelphia, Lea & Febiger, 1930.

811 South 20th Street
Birmingham, Alabama.

14. Turner, A. L.: *Diseases of the Nose, Throat and Ear*, Baltimore, William Wood and Company, 1936.

HEARING DISORDERS

A STUDY OF A NEW MEDICAL THERAPY

GEORGE R. GORDON, M. D.

Assistant Professor of Otolaryngology
Medical College of Alabama

Birmingham, Alabama

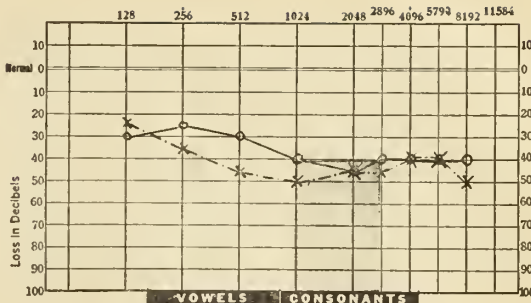
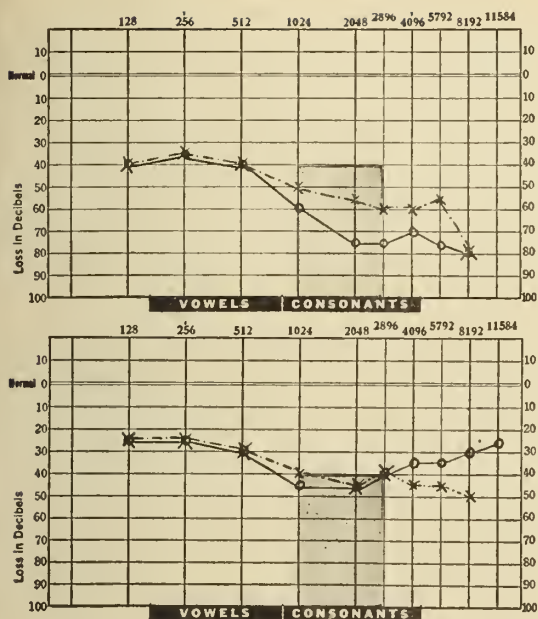
The beneficial effects of vitamin therapy upon the nervous system as a whole and the nerve of hearing (8th nerve) in particular have long been known. Guggenheim stated that it was impossible to evaluate vitamin B therapy in deafness unless studies were carried out over a long period of months or years. It was felt, however, that deafness was allied to various other factors related to growth (Selfridge), such as glandular products, mineral salts and amino acids, and as such the combined effects of all these factors might, all the more, enhance the benefits upon the nerve of hearing.

It was not until recently that the function of amino acids in the human organism was thoroughly investigated and found to possess synergistic actions involving not only cell metabolism but, at the same time, improving greatly the function of the central and peripheral nervous system as a whole.

During the course of a comprehensive study made by M. Jacobson upon the con-

tinued effects of vitamin B complex and amino acids in the treatment of conditions of anemia, nervous exhaustion, gastro-intestinal disorders, and as supportive treatment in various forms of neurosis, it was found that several patients under treatment for the above disorders revealed interesting changes in hearing acuity. It was learned that there was an improvement in hearing or an increase in hearing acuity in those patients where no hearing defect was at first evidenced.

As a result of this incidental finding, Hans Herschfeld et al. conducted a thorough investigation at the Hard of Hearing Clinic of the Polyclinic Hospital, New York City, in the use of a combination of amino acids and vitamins upon hearing disorders. These findings, as set forth in a comprehensive report, have added another progressive step in the battle against deafness. Most favorable results were obtained in hearing disorders where intramuscular injections of amino acids and vitamins, supported by oral



Air Condition: Right O Left X

Chart 1. Audiograms of M. J., female, aged 56. A, taken June 3rd, 1947; B, taken July 1st, 1947, after twelve injections; C, taken August 26th, 1947.

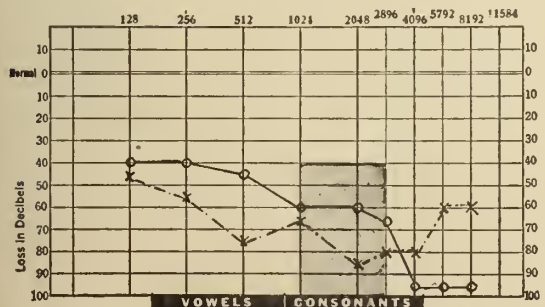
A—	% Loss	B—	% Loss	C—	% Loss
Right	68.4	Right	24.6	Right	27.2
Left	53.2	Left	33.9	Left	22.0

PHARMACOLOGICAL COMMENT

Northrop, Baumann and Stare, among others, have reported upon the relationship between enzymes, co-enzymes, and vitamins. The combination of amino acids and vitamins aid many metabolic transformations and plays an important catalytic role in many body reactions. Vitamin B complex has long been known to possess an important function in nerve metabolism. Nachmansohn showed the importance of choline, now considered a member of the vitamin B complex, in the mechanism of nerve activity. Kopetsky indicated, in a thorough report, the effect of vitamin A as a regulatory factor in blood pressure and blood distribution, an important phase of acoustic disorders. Sodium glutamate is used as a source of

administration of a similar combination, were given. It is in the high frequency range that damage to the acoustic nerve is first noticed. A direct influence upon the nerve function and gains in perception of these high tones were noted following this therapy.

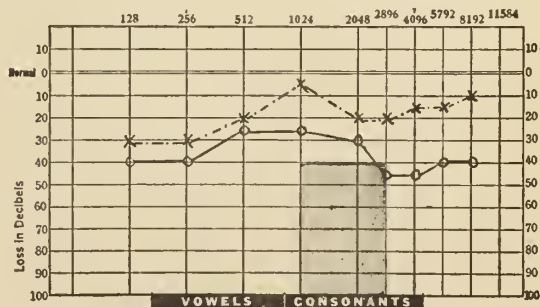
Since the type of individual attending the Jefferson-Hillman clinics in Birmingham, Alabama, so often falls in the subnutritional, subclinical vitamin deficiency group, it was felt that a similar experiment might be advantageously carried out in the Hard of Hearing Clinic of the Otolaryngological Department, Medical College of Alabama.



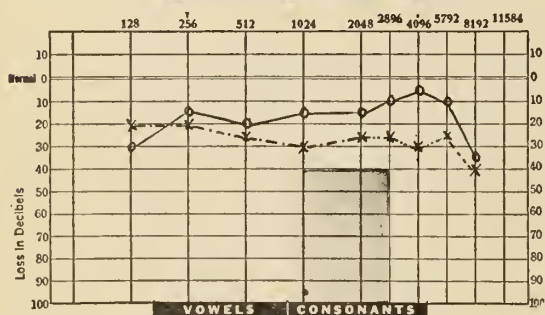
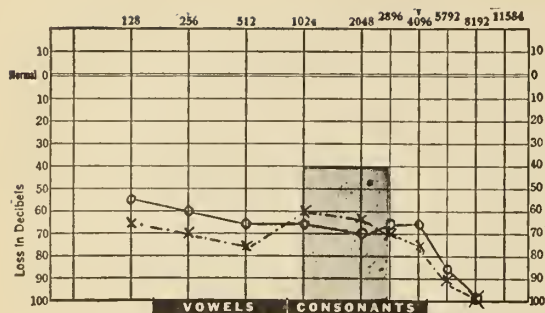
Air Condition: Right O Left X

Chart 2. Audiograms of P. S., male, aged 34. Patient developed defective hearing during combat service. A, original audiogram taken May 28th, 1947. B, taken June 25th, 1947.

A—	% Loss	B—	% Loss
Right	53.2	Right	2.6
Left	78.3	Left	17.7



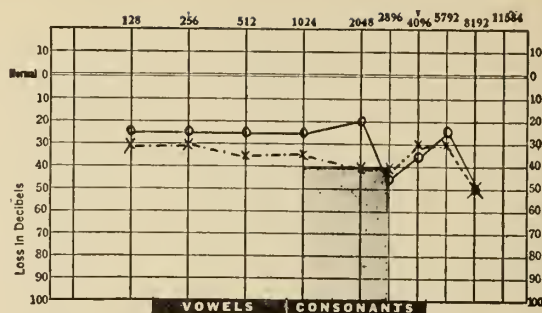
supply of glutamic acid, the only amino acid known to be metabolized by nerve tissue. Yeast and liver extract are present in the medication to supply all the vitamin B factors, while ascorbic acid functions in the maintenance of blood pressure and its influence upon the adrenal cortex.



THERAPY AND OBSERVATIONS

Investigations were carried out upon patients attending the Hard of Hearing Clinic of the Medical College of Alabama. The age range extended from a child of six to an adult of seventy. A number of these patients had been treated previously by various methods, including radium therapy in cases revealing the presence of excess lymphoid hyperplasia in the nasopharynx.

The form of treatment consisted of intramuscular injections (2 cc. of Amvitol) three times a week for four weeks. During the following two weeks two injections per week were given. This was supplemented by daily oral administration of capsules



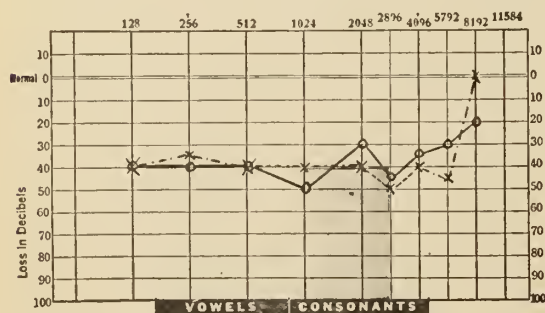
Air Condition: Right O Left X

Chart 3. Audiograms of L. C., female, aged 64. Patient had hearing difficulty for the previous eighteen months with accompanying tinnitus. A, taken April 17th, 1947. B, taken after four weeks treatment. C, taken August 5th, 1947.

A—	% Loss	B—	% Loss	C—	% Loss
Right	66.8	Right	11.7	Right	2.3
Left	70.0	Left	21.0	Left	9.6

(Hyvanol) containing the same medication as in the injectible material.

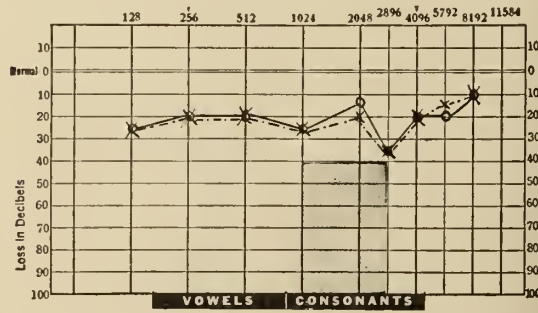
Those patients whose history revealed deficiency diets or imperfect digestive function and absorption showed the greatest responses. An interesting observation was the gratifying increase in the general well-being, mental and physical, as seen in the majority of these patients under therapy. This was evidenced by increased appetite, improvement in sleeping habits, greater energy, and a marked decrease in fatigability. Of the twenty-eight patients treated, fourteen (56%) showed considerable improvement in hearing, five (20%) showed some improvement, and six (24%) showed no improvement. Three failed to complete treatment.



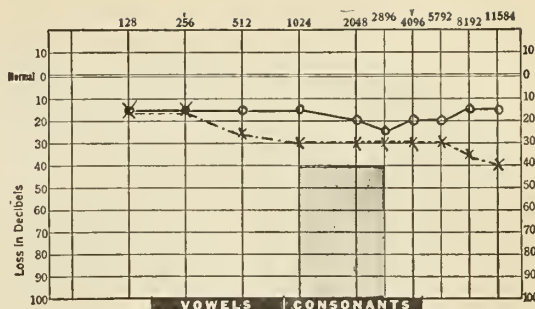
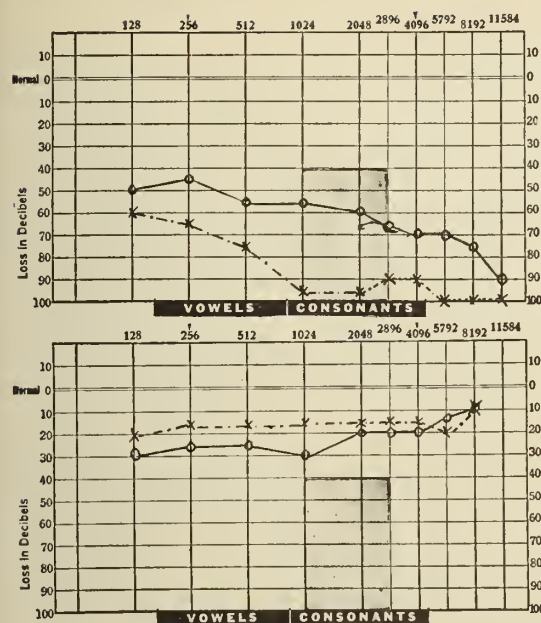
Air Condition: Right O Left X

Chart 4. Audiograms of B. R., female, aged 14. Defective hearing since the age of six. A, taken at the onset of treatment April 24th, 1947. B, taken July 7th, 1947.

A—	% Loss	B—	% Loss
Right	28.2	Right	13.6
Left	29.3	Left	14.8



While increases in acoustic perception were notable in the speech range (512, 1024, 2048), our best gains were in the high pitched tones. A loss of high tone perception is considered evidence of nerve degeneration. Thus, the improvement noted in this area, closely paralleled by that found



Air Condition: Right O Left X

Chart 5. Audiograms of L. D., male, 53. Difficulty in hearing for six years. A, original audiogram taken April 18th, 1947. B, taken March 27th, 1947. C, taken five months after therapy.

A—	% Loss	B—	% Loss	C—	% Loss
Right	49.4	Right	3.4	Right	2.8
Left	90.8	Left	12.2	Left	10.0

by Herschfeld, would indicate an improvement in the function of the nerve itself. (Crowe.)

Such a gain in high tones is distinctly advantageous since the formation of the consonants are mostly high overtones and discrimination and understanding of speech depend greatly upon them. (Guilder.) We have often heard patients say: "I can hear you but can't understand what you are saying."

Those patients who showed improvement did so early in the course of therapy, usually within the first two or three weeks. Several patients, after showing an initial improvement, regressed after discontinuance of the intramuscular injections. However, such retrogression never approached the original low hearing level. In certain cases, the patient's opinion as to the improvement did not coincide with the indicated audiometric records of improvement.

Use of this compound is not advanced as a cure-all for deafness. It is, however, an improvement in previous medical therapy in that it produces a far greater and more sustained effect than that obtained by any other method, particularly in the use of vitamins alone. The action is apparently a stimulation and restoration of the function of the auditory nerve. Added factors maintaining such an increase are the generalized improvement of the nervous system and increased resistance to fatigue. Therefore,

the ability to produce greater energy plays a big role in acoustic disorders. Since so many ears maintain a persistent gain in hearing acuity, it is natural to assume that the organism affecting hearing has been improved or a definitive action has occurred on the nerve of hearing.

Frequently hearing disorders are associated with personality changes. Anything tending to benefit the whole personality as evidenced in increased sense of well-being and an impression of strength will have an effect on the patients. This naturally tends to correlate and integrate better the sounds transmitted to the patient from the outside. It is safe to assume that, where the organism as a whole is improved and shows a higher level of performance, the individual organs also share in this higher level and response to stimulation.

SUMMARY

Twenty-eight patients were treated for hearing defects by a new form of therapy at the Hard of Hearing Clinic of the Otolaryngological Department of the Medical College of Alabama. Treatment consisted of the administration of a mixture of amino acids and vitamins by means of intramuscular injections, supported by oral administration. Of these twenty-eight patients, nineteen (76%) showed improvement, six (24%) showed no improvement, and three failed to continue treatment. Improvements were evidenced within several weeks of onset of therapy.

The most notable effects were evidenced in gains of high tone perception. Since a loss of high tone perception is considered evidence of nerve loss, the improvements noted would indicate a direct effect on the function of the nerve itself.

The great majority of these patients have maintained their initial gains. Those who have regressed have never returned to their original low level of hearing defect.

Interesting sidelights are the general systemic improvement and feeling of well-being experienced by these patients.

Note: My deepest appreciation to Mrs. Minnot and Mrs. Rile for their assistance in the handling of the clinic patients.

The products, Amvitrol and Hyvanol, used in this study were supplied through the courtesy of the Walker Vitamin Products, Inc.

BIBLIOGRAPHY

1. Crowe, S. J.; Guild, S. L., and Polvogt, L. M.: Observations in the Pathology of High Tone

Deafness, *Bull. Johns Hopkins Hospital* 54: 315, 1934.

2. Guggenheim, L.: Therapy of Deafness; Report of Cases, *Laryngoscope* 53: 441, 1943.

3. Guilder, R. P.: Audiometric and Word Test Findings. Preliminary Report, *Ann. Otol., Rhin. and Laryng.* 52: 25, 1943.

4. Herschfeld, Hans, et al.: New Treatment for Hearing Disorders, *Arch. Otol.* 44: 686, Dec. 1946.

5. Jacobson, M.: Preliminary Report of Combined Effects of Vitamin B Complex with Amino Acids, *New York State J. Med.* 45: 2079, 1945.

6. Kopetsky, S. J.: Symposium: Progressive Deafness, *Laryngoscope* 54: 217, May 1944.

7. Nachmansohn, D.: Acetylcholine and the Mechanism of Nerve Activity, *Exper. Med. & Surg.* 1: 273, 1943.

8. Nachmansohn, D.; John, H. M., and Waelsch, H.: Effect of Glutamic Acid on the Formation of Acetylcholine, *J. Biol. Chem.* 150: 1185, 1943.

9. Northrop, J. H.; Baumann, C. A., and Stare, F. J.: *Physiol. Review.*

10. Selfridge, G.: Present Status of Vitamins in Relation to 8th Nerve and Conductive Deafness, *Arch. Otol.* 34: 125, July 1941.

AN ANALYSIS OF 435 ENDOSCOPIC EXAMINATIONS

FROM THE BRONCHOSCOPIC SERVICE OF THE MEDICAL
COLLEGE OF ALABAMA

GILBERT E. FISHER, M. D.
And

JAMES J. HICKS, M. D.
Birmingham, Alabama

Bronchoscopic and esophagoscopy examinations were originally carried out in very few medical clinics in the United States. However, in recent years more and more young men have been trained in this specialty until at present the endoscopic service is an integral part of each large teaching institution. Thus, with the establishment of a four-year medical school in the State of Alabama, a bronchoscopic service was established within the ear, nose and throat department of that institution.

At first our chief concern was that of removing foreign bodies from the larynx, trachea, bronchi and esophagus. However, as this service has grown, we have been called upon with increasing frequency to aid in the establishment of diagnoses of chest and esophageal pathology and to give direct

assistance to the Departments of General and Thoracic Surgery.

Since April 1946 practically every patient entering the hospital complaining of dysphagia or difficulty in swallowing has undergone esophagoscopy examination. Through this type of examination, the diagnoses of achalasia, esophageal manifestations of avitaminosis, cardiospasm, esophageal diverticulum, congenital and lye strictures of the esophagus, and neoplasms of the esophagus have been established. The majority of the esophagoscopy examinations, however, have been carried out for the removal of foreign bodies and the direct visualization of lye burns of the esophageal mucosa. Table 1 illustrates the number of esophagoscopy examinations carried out from April 1946 to March 1947.

During this same period of time 86 laryngoscopic examinations were performed

Respectively, Professor and Resident, Department of Otolaryngology and Bronchoscopy, Medical College of Alabama, Birmingham.

TABLE 1
ESOPHAGOSCOPY

- 9 Diagnostic—where no abnormality was found although dysphagia was present
- 17 Foreign bodies
- 5 Tumors—all squamous cell carcinoma
- 19 Lye burns
- 8 Cardiospasm
- 6 Small lacerations of mucosa in patients with history of foreign body although no foreign body was found
- 4 Avitaminoses
- 67 Esophagoscopy examinations carried out where direct visualization of lye burns and strictures was considered essential in the process of dilatation

135

as shown in Table 2. One notes immediately that the chief finding upon laryngoscopic examination was that of new growth within the larynx. Twenty-three tumors of the larynx were found and diagnosis established by microscopic examination of biopsy material. Laryngoscopy was repeated on 23 occasions for removal of juvenile papillomatous regrowth on the vocal cords. Fifteen diagnostic laryngoscopies were performed where no lesion was found, but in these individuals the direct laryngoscopic examination had to be carried out because of our inability to visualize the anterior commissure of the larynx to our satisfaction.

TABLE 2
LARYNGOSCOPY

- 2 Hysterical aphonia
- 9 Chronic laryngitis
- 23 Tumors
 - 18 Benign
 - 10 Papilloma
 - 1 Cyst of false cord
 - 6 Fibroma
 - 1 Hemangioma
 - 5 Carcinoma
 - 1 Mucous cyst of epiglottis
 - 1 Paresis of vocal cord (lung tumor)
 - 1 Tuberculous ulcer
 - 8 Foreign bodies
 - 3 Diphtheria
 - 15 Diagnostic examinations which were negative. These examinations were performed because of inability to visualize the anterior commissure satisfactorily with mirror examination.
 - 23 Repeat laryngoscopies for removal of juvenile papilloma of larynx.

86

Table 3 illustrates that 214 bronchoscopic examinations were carried out during this same period of time. Here one notes that

the largest number of examinations revealed chronic bronchitis. We were called upon by the Department of Surgery for bronchoscopy on 16 occasions where aspiration of fluid or thick tenacious mucoid discharge filled or partially filled a main bronchus producing atelectasis. The atelectasis was relieved immediately upon aspiration in each instance. This particular treatment for atelectasis is most dramatic as the elevated pulse, respiratory rate and temperature return to normal almost immediately when the obstructed bronchus is reopened and the lung aerated.

TABLE 3
BRONCHOSCOPY

- 15 Foreign bodies
- 12 Lung abscess
- 5 Fungus infections
- 7 Bronchiectasis—lipiodol instilled
- 2 Cystic disease of lung—lipiodol instilled
- 19 Tumors
 - 7 Carcinoma—positive biopsy
 - 5 Diagnosed by x-ray—bronchoscopy revealed widened carina or other distortion of architecture
 - 2 Cylindroma
 - 5 Diagnosed by x-ray with entirely negative bronchoscopic examination
- 7 Laryngo-tracheo-bronchitis
- 15 Tuberculous ulcers—cauterization
- 1 Tuberculosis diagnosed by x-ray with negative bronchoscopic findings
- 31 Reexaminations—in which aspiration and cauterization were carried out in lung abscess and bronchiectasis
- 84 Diagnostic—in which no specific pathology was found except bronchitis
- 16 Bronchoscopy to relieve atelectasis

214

Nineteen patients were bronchoscoped in whom a diagnosis of tumor of the lung was considered. Seven carcinomas and two cylindromas were positively diagnosed by biopsy and microscopic examination of the removed tissue. Five patients, in whom a diagnosis of tumor of the lung was made on roentgenologic study, were found to have an abnormally widened carina. This finding is in itself a very definite evidence, in a large percentage of cases, of mediastinal tumor. Five patients in whom tumor of the lung was diagnosed by x-ray had entirely normal bronchoscopic findings.

Five patients were found to have fungus infections in the lung as demonstrated by

smear and culture of secretions removed from the surface of extremely hyperemic bronchial mucosa. This disease has been considered infrequently as a cause of chronic bronchitis but it is our feeling that it is much more prevalent than is generally suspected.

Since March 1947 the volume of work in

the bronchoscopic service has greatly increased. In a paper now being prepared for publication we wish to present a number of extremely interesting case reports to the doctors of Alabama who have been exceedingly cooperative in sending these patients to our State Medical College.

THE PROGRESS OF PHYSICAL MEDICINE AND ITS CLINICAL APPLICATION

FERDINAND F. SCHWARTZ, M. D.

Visiting Specialist in Physical Medicine
Veterans Administration

Birmingham, Alabama

Since the dawn of mankind physical agents have been employed in the treatment of human ailments. When primitive man crawled to rushing streams to bathe his wounds, and when the first Pharaoh established Alton Ra, as the Spirit of the Sun, to be worshipped, then physical medicine made its entry in the world of therapeutics. Throughout the early literature of the Egyptians, Greeks and Romans, writers referred to the beneficial effects of light and baths, and magnificent spas were built by the Greeks and Romans to allay suffering. Pliny, the historian, wrote extensively on the application and benefit of light therapy. John Wesley, in 1780, described the management of certain diseases by electricity. Benjamin Franklin employed electricity in the treatment of arthritis. Yes, physical therapy was created during the Dark Ages, veiled by mysticism and empiricism, and this very fact may account for the attitude of the medical profession throughout the years toward the value of physical medicine.

However, the last two great wars brought it forth as a true member of the medical sciences. In 1925, the House of Delegates of the American Medical Association established the Council on Physical Therapy, which was recently changed to Physical Medicine, and in 1947 a Specialty Board of Physical Medicine was authorized. The ef-

forts of the Council were further aided by the Baruch Committee grant of \$1,100,000.00, and the National Foundation for Infantile Paralysis advanced large sums of money to medical schools for research and teaching in physical medicine. With the aid of all these committees and the grand work of the American Medical Association, physical medicine will take its place with the other branches of medicine on a scientific basis for the benefit of mankind.

Physical medicine may be defined as the application of physical agents, such as heat, light, electricity, water and massage, in the treatment of disease. At present it also embraces occupational and rehabilitation therapy. This paper deals with hydrotherapy, electrotherapy, thermotherapy and exercise. Occupational therapy and rehabilitation will not be discussed.

HYDROTHERAPY

Hydrotherapy is the remedial use of water in any form, as solid, liquid or vapor, internally or externally. The effects of water are those of (1) a tonic, to increase various vital activities; (2) a stimulant, to arouse body functions; (3) a sedative, to relax and soothe; (4) an anodyne, for relief of pain; (5) a diaphoretic, to promote sweating; and (6) an eliminative, to promote excretion from the skin, kidneys and lungs. In applying hydrotherapy it is important to remember the correct temperature.

Very Cold	32-60	Neutral	92-94
Cold	60-70	Warm	94-98
Tepid	80-90	Hot	98-104

Very Hot (104-120 Fahrenheit)

Read before the Jefferson County Medical Society, Birmingham, Jan. 13, 1947.

Formerly Chief of Physical Therapy at North-
ington General Hospital, Tuscaloosa, Alabama,
and Walter Reed General Hospital, Washington,
D. C.

Local applications of water may be used in the form of hot blankets, cold and hot sitz baths, contrast baths, whirlpool baths, and hot or cold full baths. Indications are sprains, contusions, after-fracture care, infected wounds, burns, indolent ulcers, arthritis, myositis, neuritis and nervous conditions.

ELECTROTHERAPY

Electrotherapy may be defined as the treatment of disease by electricity. The types are conventional diathermy, short wave diathermy, and low frequency currents. In the first, heat is derived by passing an electric current of high frequency type through the tissues by means of contact electrodes. That there are specific effects other than those attributable to heat is the consensus of recent investigators applying heat through diathermy.

The indications are chronic arthritis, myositis, bursitis, sprains, pleurisy and genito-urinary inflammations. Contraindications are walled-in pus, purulent joints, acute osteomyelitis, potential or actual hemorrhage and malignancy. Precautions to be observed are as follows: (a) Be sure there is proper contact so that burns may be avoided; (b) Do not use too great current concentration, and watch for local anesthetic areas, abrasions, scars and metals in the field of treatment; (c) Never leave the patient unguarded, and check connections and electrodes frequently; and (d) The principles of surgical drainage in purulent infection should be observed.

In short wave diathermy, heating effects are obtained by the electric field created by condensing pads, air space electrodes, cables and drum electrodes. Indications for its use are suppurative processes, diseases of the bones and joints, such as sprains, arthritis and periostitis; in skin conditions, such as furuncles; in gastroenterology, such as spastic colon; in diseases of the nervous system, and in otolaryngology. Contraindications are acute infectious arthritis, hemorrhage, malignancy, acute osteomyelitis and heat sensitivity. These are the precautions to be observed: (a) Do not use high energies in acute cases or in poor circulation; (b) Remove all metals from the field of treatment; (c) Be certain that the patient cannot be grounded through contact with radiators and steam pipes; (d) Use absorb-

ing material for spacing at least one inch in thickness. Remove material if it becomes damp; (e) Cables should not touch each other; (f) Watch the patient, especially if treatment is applied around the heart and head region; and (g) There should be no metal, leather or moist fabric on the treatment table.

Low frequency currents are employed in nerve and muscle testing, in stimulating muscle contraction, to relax muscle spasm, and for passive exercises. They are indicated for the prevention of adhesions, in muscular atrophy, fibrosities, atony of the abdominal wall, tenosynovitis, sprains, weak feet, and for passive exercises. Contraindications are progressive muscular atrophy, myasthenia gravis and cerebrospastic paralysis.

TYPES OF LOW FREQUENCY CURRENTS:

1. Galvanic Current. A unidirectional, direct current which has polarity. It is a chemical current. The action of the positive pole is vasoconstriction. It also hardens tissue, is acid in reaction, and attracts oxygen. The action of the negative pole is vasodilatation. It softens tissues, attracts hydrogen, and is alkaline in reaction. Indications for its use are arthritis, neuritis, neuralgia, paralysis, indolent ulcers, bursitis and circulatory conditions. It is also used in ion transfer and as exercising current.

2. Sinusoidal Current. A type of current in which the polarity alternates in perfectly regular, opposite and equal cycles or phases. Indications are paralysis and atrophy of disuse.

3. Faradic Current. It is an induced alternating current without polarity. Indications are electrodiagnosis, exercise current and in atrophy of disuse.

THERMOTHERAPY

Thermotherapy is the scientific application of heat in the treatment of disease. The sun is the cheapest and most important general source, but other sources are electricity and chemical agents. Physiologically, heat relieves pain and muscle spasm, stimulates circulation and promotes relaxation, and increases the nutrition of the parts affected. Indications are traumatic conditions, such as fractures, sprains, synovitis, myositis; in arthritic affections, neuralgia and neuritis;

in acute and subacute and chronic catarrhal conditions of the mucous membranes; and in infections of the skin preliminary to massage. Contraindications are very advanced arteriosclerosis, thrombo-angiitis, high fever, walled-in pus, burns and fresh scars, tender tissues, acute arthritis and osteomyelitis. Sources of artificial heat are luminous and non-luminous lamps, bakers and pads. Certain precautions are to be observed. Know the diagnosis and treatment; never allow the patient to adjust the lamp himself; always support paralyzed parts, and cover scars and anesthetic areas. Distance of lamp should be about 24 inches directly over the area treated, the patient's eyes should be covered, and time of application from 20 to 30 minutes.

MASSAGE

Massage is the application of pressure to the tissues for the purpose of stimulating them. The response to pressure is a direct physical influence on the content of the vascular and lymph channels in the tissues. Normal physiologic activities exert variable pressure on the tissues but if physiologic activity is lessened then massage may be helpful. Massage will improve the blood supply in the muscles, will aid in breaking up adhesions, and will aid gravity in restoring vasomotor tone. It should prove valuable in inactive patients where there is a lack of contraction of the muscles of locomotion. The indications for massage are as follows: (a) In arthritis to prevent atrophy of the muscles and to increase local circulation. It should always be preceded by heat. (b) In fibrositis, fibrous nodules may be massaged away by the heavy stroking type, combined with kneading. (c) In orthopedic conditions, such as sprains, dislocation and fractures, massage may be employed in order to improve circulation, to relieve spasm, and to overcome or prevent adhesions.

ULTRAVIOLET

The effects of ultraviolet rays on the skin are erythema, dermatitis of varying degrees, pigmentation, and activation of cholesterol; on metabolism, an improvement in general health; and on the eyes, conjunctivitis. They are used in rickets, pigmentation, indolent ulcers and wounds, skin conditions and calcium deficiency. Ultraviolet rays are contraindicated in active tuberculosis, in hyper-

thyroidism, diabetes, nephritis, and all forms of generalized dermatitis.

THERAPEUTIC EXERCISE

Therapeutic exercise is based on anatomic and physiologic principles and is employed for the prevention, arrest or correction of certain diseases or deformities. In its application, the patient should be encouraged, he should not become fatigued, and there should be progression. Exercises may be classified as remedial or corrective, for existing defects, such as postural ones, and for arthritis; and reeducational, commencing with the simplest type of movement and progressing to the most complicated, as indicated in poliomyelitis and in nerve injuries.

Exercises may be passive or active in type. In the former, the movement is carried through by the operator without the assistance or resistance of the patient. It helps to prevent contractures, maintains or increases motion, and aids circulation. In the active type, the exercise is carried through by the patient with or without the aid of the operator. It may be a static contraction as in the case of the quadriceps; assistive, carried through by the patient with the assistance of the operator; free, executed without the assistance of the operator; or resistive, the resistance being offered by the operator or apparatus.

Exercise increases circulation and metabolism, promotes elimination, and prevents deformity.

POSTURAL EXERCISE

Posture is the proper relationship between the various parts of the body, correct poise, and control of the body with normal functioning of the organs. Postural exercise may benefit or correct postural backache, postural strain, lordosis, kyphosis and scoliosis.

Current statistical data on tuberculosis mortality rates are not an index of current infection and morbidity. Nor, in fact, are they a measure of the effectiveness of current control efforts. They are merely the expression of the relative condition or state of these factors at some time in the recent past. In similar fashion, we may assume that the tuberculosis death rate of the future will reflect the present universe of environmental control and human resistance and susceptibility.—*Francis J. Weber, M. D., Ed., Pub. Health Rep., Feb. 6, 1948.*

Diabetes in Children—Diabetic acidosis is a medical emergency of the first order. Recovery from it is directly related to the severity of the acidosis and to the length of time for which it persists. Delay of even a few hours may mark the difference between recovery or death. Thus when diabetic acidosis is suspected every effort should be made to confirm the diagnosis in the shortest possible time and to institute appropriate therapy without delay.

Every child who has symptoms of acidosis, whether he is a known diabetic or not, should have blood drawn for determination of the blood sugar level and the carbon dioxide content. In addition, if he cannot or will not void, he should be catheterized and the urine examined for sugar and acetone. Since the most important features of treatment are the correction of dehydration and the replacement of the insulin deficit, the intravenous administration of physiologic saline solution should be started immediately, and as soon as the urinary and blood data are available (from twenty to twenty-five minutes) insulin should be injected. Other phases of the management which require consideration are the treatment of shock, gastric lavage, correction of acidosis with alkali, restoration of glycogen deficits by administration of glucose, and, in some instances, blood transfusion.

In acidosis of any severity there is loss of body water and hence dehydration. The resulting hemoconcentration is responsible for loss of renal function which in turn increases the severity of the acidosis. In addition to loss of water, there is also loss of electrolytes. To a considerable extent the body will make the necessary adjustments in electrolyte structure if the dehydration is corrected by sufficient amounts of physiologic saline solution to permit restoration of renal function. Recently the question has been raised whether the recovery process cannot be facilitated by the addition of small amounts of potassium. If potassium is employed its administration should be deferred until a sufficient amount of physiologic saline solution has been given to institute urine formation again. Another factor which requires consideration is the correction of the acidosis by the administration of alkali. This will be discussed later. No hard and fast rule can be given for the quantity of saline solution to be administered. In general, however, in the severely dehydrated cases, the total twenty-four hour fluid requirements of a healthy child of the same age and size can be given within a period of from four to six hours. Thereafter, fluids may be administered at such a rate that the usual twenty-four hour requirements are provided over this period of time. Parenteral fluid administration is usually required for periods of from twenty-four to forty-eight hours in the severe cases or until the child is conscious and able to retain orally ingested fluids without vomiting.

Insulin is without doubt the most important factor in the treatment of diabetic acidosis. There should be no delay in administration of the initial dose. In the more severe cases a portion of the initial dose should be given intravenously, especially when the circulation is poor. The total

initial dose can be based to some extent upon the age of the child. Thus, infants under 1 year of age may be given 20 to 30 units; at 5 years of age, 40 to 60 units; and at 10 years of age, 50 to 70 units. When the child is known to have diabetes and has been receiving amounts of insulin which, prior to the development of acidosis, had been fairly satisfactory, the initial dose for the treatment of the acidotic stage may equal or slightly exceed that of his usual total daily requirement. The second subcutaneous injection should be given within a period of from one to two hours, and may be approximately one-half the initial dose. Thereafter, injections of insulin should be given at from three to four hour intervals, the quantity being based upon the blood sugar level. When the blood sugar has been reduced to a level in the range of 250 mg. per 100 cc. the intravenous administration of glucose solution is instituted and, during this phase, approximately 1 unit of insulin is given for each gram of sugar administered. Only the rapidly acting insulins, regular or crystalline, are employed for the treatment of the acidotic stage.

There is lack of agreement concerning the advisability of using alkali for the partial correction of severe degrees of acidosis. There are some who state that there is no need for it whatsoever. Evidence in favor of such a view is based on the facts that severely acidotic patients may recover without it and that in some series of cases in which alkali has not been used the mortality rate has been lower than in other series in which it was employed. Such comparisons are not entirely valid since other variables have not been taken into account. There is no doubt but that recovery from acidosis and from the coma which accompanies it can be accelerated by the judicious use of alkali. On the other hand, the patient can be thrown into a state of alkalosis by improper use of it. The question stated simply is whether irreversible cellular changes, especially in the nervous tissues, may occur if severe degrees of acidosis are permitted to persist and whether if in an occasional case such irreversible changes can be avoided by treatment with alkali, thus permitting recovery which would otherwise not occur.

In order to test our clinical impressions of the value of alkali therapy, my coworkers and I have studied this problem in experimental animals. Our data indicate not only that the rate of recovery of dogs from experimentally induced acidosis is accelerated by the intravenous injection of a measured amount of alkali but that the incidence of recovery of dogs whose pH was below 7.10 for more than twenty-four hours was significantly increased when alkali was administered.—*Nelson, Texas State J. Med., March '48.*

General hospitals should admit all contagious diseases that need hospital care. This would eliminate expensive contagious disease hospitals that are practically empty half the time. Tuberculosis is becoming more and more a responsibility of the general hospital as the disease is detected earlier and treatment is much the same as for any other acute illness.—*Graham L. Davis, Bull. Am. Coll. Surgeons, Jan., 1948.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham
C. E. ABBOTT Tuscaloosa
JOHN L. BRANCH Montgomery
D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

April 1948

**AMERICAN MEDICAL ASSOCIATION SAYS
PUBLIC DEMAND FOR SERVICE AT
NIGHT MUST BE MET**

The American Medical Association calls on county medical societies to meet the public demand for emergency medical service at night.

"From many sections of the United States," says an editorial in a recent (March 6) issue of *The Journal of The American Medical Association*, "complaints have come lately that persons who have called physicians late at night have been unable to secure attendance from either those whom they considered their family physicians or from specialists or, indeed, from any physician."

The American Medical Association says that large county medical societies or urban groups should maintain a physicians' telephone exchange which would take the responsibility for locating physicians if response is not made to the ringing of the telephone in the home or in the office.

The solution is simple and practical, requiring only a minimum of community organization. A number of county medical societies already maintain a physicians' telephone exchange where doctors' calls may be received and doctors located if their office

or home telephones do not respond. Such an exchange can be utilized, as, for example, at night or on holidays, simply by furnishing the exchange with a list of physicians who are able and willing to make night calls. Such physicians would probably include the younger general practitioners, newcomers to the community, and others in general practice. If such a roster were available, and its availability widely publicized, night calls for medical service would soon gravitate to this center and the patient would be assured the services of a physician.

Under such a system the necessity for calling many doctors would be eliminated. Two calls at most would be necessary. Where there is no physicians' telephone service, it might be possible to have the hospitals cooperate by handling such night calls.

The Medical Society of the District of Columbia and the Milwaukee County Medical Society have found such a plan practical, as have a number of other societies.

By this simple and practical expedient, which is doubtless in effect in modified form in a number of communities, the sick can be served and the medical profession can redeem its pledge of unselfish public service.

It is highly important that where such arrangements exist they be brought to the attention of the lay people in the community through appropriate public channels, not once but repeatedly, to keep the shifting populations well informed.

Few problems in the field of medical service have aroused so much public discussion. Whether resentment against physicians is justified or not, it does harm. The solution for this problem is so eminently simple and would reflect so favorably upon physician-patient relationships that medical societies everywhere are urged to give it serious consideration immediately.

YOU AND THE NEW A. M. A. DIRECTORY

The American Medical Association reports that 115,000 physicians have returned their directory information cards supplying data for the new American Medical Directory now being compiled. Those physicians who have received these cards and have not returned them are urged to do so at once. This information is needed for your listing in the 1949 Directory.

Please use the card that has been addressed to you, as it bears the serial number which has been assigned to your data. If a card is received by you addressed to another physician who has moved away, return the card with the doctor's new address written on the slip bearing his name and serial number if you can supply the information.

Before filling out your card, check the list of specialties on the back of the card and select only one specialty, indicating, in the space provided on the front of the card, either that your practice is limited to that specialty or that you give special attention to that branch of medicine along with general practice. Fill in the lines marked "Intern" and "Resident" *only* if you are now serving an internship or residency in a hospital.

A second request with a duplicate information card will be sent very soon to all physicians from whom cards have not been received so that they may have an opportunity to supply the necessary information for their listing in the Directory.

In checking the information cards received from physicians, the Directory Department of the A. M. A. reports that it becomes increasingly apparent that many are not aware of the difference between "Membership" and "Fellowship" in the American Medical Association. Here are the official definitions:

Every *member* in good standing in the constituent medical association of the state in which he is engaged in practice whose name is officially reported to the Secretary of the American Medical Association for enrolment becomes automatically a *member* of the American Medical Association and is not called on, as such, to pay any dues or to contribute financially to the Association.

Members of the American Medical Association are eligible to apply for *fellowship*.

To qualify as a *fellow*, a *member* in good standing is required to make formal application for *fellowship*, to pay *fellowship* dues and to subscribe for The Journal. Applications must be approved by the Judicial Council. Fellowship dues and subscription to The Journal are both included in one annual payment of \$12.00, which is the cost of The Journal to subscribers who are not *fellows*.

Members of constituent state medical associations pay dues to those bodies, but as *members* they pay nothing to the American Medical Association. *Fellows* pay dues and subscription to The Journal in the sum of \$12.00 a year, which has nothing to do with county or state dues.

According to an amendment to the By-Laws of the American Medical Association, no physician may be officially recorded as a *member* of the American Medical Association except on the basis of membership in one constituent state medical association, and that one the association of the state in which the physician concerned maintains legal residence and engages in the practice of medicine.

Each Fellow receives a Fellowship Card from the Association annually as payment of his dues is recorded, which card is presented for admission to the annual meetings of the Association.

Physicians who are eligible for Fellowship should make formal application immediately so that they may attend the Chicago Session and so that a record of their Fellowship may be received in time to include the Fellowship symbol in their data listed in the new American Medical Directory.

NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The National Gastroenterological Association will hold its Thirteenth Scientific Session at the Hotel Pennsylvania in New York City on June 7-10, 1948. In response to popular request the program this year will again, for the most part, consist of symposia and there will be one panel discussion.

The program for the first three days will be at the Hotel Pennsylvania and will consist of symposia on gastroduodenal ulcer; ulcerative colitis; jaundice and metabolism, nutrition and allergy. The panel discussion, which will be followed by a question and answer period, will cover the topics of diabetic, tuberculous, psychosomatic and cardiac manifestations in gastrointestinal diseases. The fourth day of the session will be devoted to a clinical day at cooperating hospitals in New York City.

At the annual banquet to be held on Tuesday evening, June 8, 1948, the winner of the National Gastroenterological Association's 1948 cash prize award contest for the best unpublished contribution on gastroenterology, or an allied subject, will receive the prize of \$100.00 and a Certificate of Merit.

Further details and a copy of the program may be obtained by writing to the Secretary, National Gastroenterological Association, 1819 Broadway, New York 23, New York.

PREVENTIVE MEDICINE GETS INTERIM SPECIALTY BOARD

Consultants and practitioners of preventive medicine, one of the least formalized but most universally important branches of medical science, has learned that a great forward step toward professional recognition of their calling as a distinct medical specialty has been made by the formation of an Interim Board of Preventive Medicine. Announcement of the move was made jointly by the Surgeons General of the Army, Navy and U. S. Public Health Service.

War and postwar conditions have emphasized the need for uniformly high standards in the field of public health and preventive medicine, and the Interim Board was formed chiefly for the purpose of setting up certification requirements for medical officers seeking to qualify as specialists. The cooperative efforts of these three services will undoubtedly give impetus to a growing demand for creation of an American Board of Preventive Medicine and Public Health to take its place along with the 16 medical specialty boards already in existence and supply the uniform professional standing and protection specialists need in order to function most effectively.

Members of the Interim Board were selected with great care. Several weeks ago the three Surgeons General formed an advisory committee to consider the problem. Through a pooling of recommendations, a panel was formed of men throughout the country who were considered the most distinguished in the field of public health and preventive medicine. From this panel, six civilian authorities on the specialty were chosen and all accepted an invitation to form the Interim Board. They are: Dr. Ernest L. Stebbins, director of Johns Hopkins University School of Hygiene & Public Health; Dr. Wilton L. Halverson, California State Director of Public Health; Dr. Harry S. Mustard, New York City Health Commissioner; Dr. Thomas Francis, Jr., University of Michigan School of Public Health; Dr. Gaylord W. Anderson, director of the University of Minnesota School of Public Health; and Dr. Hugo Muench, assistant dean, Harvard School of Public Health. Chiefs of the preventive medicine divisions of the Army and Navy and an officer selected by the Surgeon General of the Public

Health Service, complete the roster. They are: Dr. James Crabtree, Deputy Surgeon General, U. S. Public Health Service; Colonel Tom F. Whayne, Chief, Preventive Medicine Division, Office of the Surgeon General, U. S. Army, and Captain Otto L. Burton, Chief, Preventive Medicine Division, Bureau of Medicine and Surgery, U. S. Navy.

At its first meeting the Interim Board began drafting a preliminary bill of requirements for certification and elected Dr. Stebbins chairman. Confidence was expressed that official standards for qualification as a specialist in preventive medicine will soon be achieved.

Preventive medicine and public health, although practiced long before most of the other medical disciplines in the form of primitive tribal taboos, has lagged behind other branches of medicine in organization and recognition. Today the work of the various groups interested in research and practice in this field is largely uncorrelated. Investigations into industrial and personal hygiene, nutrition, water supply and sewage disposal, mechanisms of disease transmission, pest control, housing and ventilation, and all the other multifarious aspects of preventive medicine and public health, are for the most part carried on independently by many private concerns and various agencies of state and federal governments. Practitioners in different lines and different areas have no uniform professional qualifications. With its own specialty board and its own professional organization, this field could maintain its integrity and command uniform national recognition. The joint action of the Army, Navy and Public Health Service is a step in this direction.

BIOGRAPHY OF NEW SURGEON GENERAL

Dr. Leonard A. Scheele, new Surgeon General of the U. S. Public Health Service, was born in Fort Wayne, Indiana, July 25, 1907. He received his A. B. from the University of Michigan in 1931; his B. S. in Medicine in 1933 and his M. D. in 1934, both from Wayne University, Detroit, Michigan.

He was commissioned in the U. S. Public Health Service in 1934. His first assignment was as Assistant Quarantine Officer at the Port of San Francisco. He was transferred

to the same position in the Port of Honolulu during 1935-36, then was made Health Officer of Queen Anne's County, Maryland, in 1936-1937.

From 1937 to 1939 he was a Special Fellow at Memorial Hospital, New York.

He was Officer in Charge of the National Cancer Program of the National Cancer Institute from 1939 to 1942. In this capacity he was concerned with studies in epidemiology of cancer, in end-results of cancer treatment and liaison with the states and various medical organizations on cancer control. He held the position of Chief, Field Casualty Section, Medical Division, U. S. Office of Civilian Defense in 1942 and 1943.

From 1943 to 1945 he was assigned to the Army in a variety of major assignments in war areas. He served in Military Government and Allied Commission medical operations in Sicily, Italy, and later was in charge of the Preventive Medicine Section of the G-5 Division of Supreme Headquarters of the Allied Expeditionary Force in Northwest Europe. Later he was medical representative of the Medical Section of the Allied

Control Council in initial operations of that group in Berlin after the surrender of Germany.

Military decorations he received include the American Typhus Medal for his work in the control of that disease in Northwest Europe during 1944-45; the Legion for Merit of outstanding work in controlling communicable diseases in the European Theater of Operations; the Order of Public Health, from France, and several other foreign decorations.

During 1946-1947, Dr. Scheele was Assistant Chief of the National Cancer Institute of the Public Health Service's National Institute of Health. In July of 1947, he became Assistant Surgeon General of the Service and Director of the Cancer Institute.

He is a member of the American Public Health Association and the American Medical Association. He has also been connected with the American Association for the Advancement of Science, American Association for Cancer Research, and the American Public Health Cancer Association.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

THE INFANTILE PARALYSIS OUTLOOK

Some time ago a group of American archeologists, digging expectantly in the ruins of an ancient Egyptian temple, unearthed a portrait of a child. The portrait was believed to be about 4,000 years old. Although it inevitably showed the effects of age, it was clear enough to leave no doubt that the subject had not been a normal youngster. Indeed those archeologists saw enough to convince them that he was a cripple; moreover, that he was a victim of what many of us consider a modern form of illness, infantile paralysis.

Using the information made available to him by the report of those archeologists, the anonymous author of a booklet issued by the National Foundation for Infantile Paralysis reconstructed the child's illness. He wrote:

"The sun shone brightly on the rippling waters of the Nile as young Antef, tablet and reed pen in hand, walked slowly and painfully along its banks. Generally he ran, singing, to his school, but last night he had been fevered and slept little, and today he felt a strange lethargy. He did not notice the lotus raising its beautiful blossoms above the water or the ibis wading in the shallows. As he reached the Temple where the priest awaited him, his legs gave way beneath him and he fell to the ground. In vain he struggled to rise; he could not. His fellow students gathered 'round, laughing and poking fun at him, but at last they understood that something strange was the matter with their schoolfellow. Sober now, between them they carried the boy home to his puzzled and anxious parents.

"For weeks Antef lay on his bed of carved acacia wood, sick and miserably staring at the pool of water that kept the inner courtyard cool. At last the pain and soreness passed; he felt well again, but his legs were weak and withered. The priest attributed the misfortune to the wrath of the Goddess Isis, to whose service the boy had been vowed, but prayers and sacrifices were of no avail; he remained a cripple for life."

One of the many things those Egyptologists have not been able to tell us is the name

by which the disease was known at that time. This is certain, however; it was not known as infantile paralysis or poliomyelitis, or by the Egyptian words for those terms. It probably had many names in many parts of the world prior to the closing decades of the nineteenth century, when it was widely known as the "Heine-Median disease." This name was medical science's way of paying tribute to two of its outstanding members who had made notable contributions to humanity's knowledge of the disease. Dr. Heine was the first to reach the conclusion that the crippling involved in infantile paralysis has nothing at all to do with the bones and to run the risk of considerable professional embarrassment by stating his belief publicly. The second member of that name-giving duo was a professor at the University of Stockholm who fought this disease as valiantly during two outbreaks in his native Sweden as his elder brother-in-medicine, Dr. Benjamin Rush, of Philadelphia, fought another dangerous disease, yellow fever, in the closing decade of the eighteenth century.

Even in modern times, when poliomyelitis is recognized as a major factor in individual and public health, its importance is out of all proportion to the number of its victims. Indeed, many other forms of illness which cause much less terror to their actual and threatened victims than this one attack many more persons and cause many more deaths. In 1945, for example, when there were 153 reported cases of poliomyelitis in this state, there were 603 reported cases of endemic typhus fever, 2,913 reported cases of malaria (probably only a fraction of those actually occurring in that time), 349 reported cases of measles, 929 reported cases of scarlet fever, 1,072 reported cases of whooping cough, 697 reported cases of diphtheria, 7,339 reported cases of influenza, 1,004 reported cases of chickenpox, 2,690 reported cases of tuberculosis, 3,050 reported cases of pneumonia, 32,507 reported cases of syphilis, 13,967 reported cases of gonorrhea and 1,397 reported cases of mumps. Indeed, of the 28 communicable diseases listed in the 1945 morbidity tables, only 12 stood below poliomyelitis in the number of cases reported during that year. Incidentally, those 12 included three—leprosy, dengue and ophthalmia—which presumably were non-existent

in this state at that time as no cases of these diseases were reported.

The same sort of comparative picture is presented by a survey of deaths due to poliomyelitis and those caused by other diseases. Against the 21 Alabamians who succumbed to this form of illness in 1946, the latest year for which complete vital statistics reports are available, there were 33 who, during that 12-month period, succumbed to meningitis, 38 who died from whooping cough, 29 whose deaths were attributed to diphtheria, 1,098 who presumably would still be living had they not contracted tuberculosis, 31 who died of malaria, 332 who succumbed to syphilis, 410 whose lives were cut short by influenza, and so on. Indeed only ten of the 41 specific diseases listed in the mortality table prepared by the State Health Department's Bureau of Vital Statistics caused as few 1946 deaths as poliomyelitis. They were typhoid fever, undulant fever, scarlet fever, erysipelas, septicemia and purulent infection, non-puerperal, gonococcus infection (gonorrhea), dysentery, smallpox (which caused no deaths), encephalitis and rabies.

But do not be misled by such comparative figures, correct though they are, for the number of persons a particular form of illness attacks or even the number it kills does not give a true picture of its seriousness. It is quite true that, if poliomyelitis had no more permanent effect upon its victims than most of the other diseases that have been mentioned, it should make no more demands upon the generosity and sympathy of the American people than those other diseases do. But its effects are greatly different from theirs. When it strikes, it does not strike for just days or weeks or even months. Unless its victims receive special and specialized treatment and care, they are likely to feel its cruel impact as long as they live, not only in terms of physical health but also in terms of greatly diminished, if not entirely erased, earning power, social maladjustment, irregular school attendance, a grave handicap in the stern competition in getting and holding jobs, and in many other ways far distant from the field of health per se.

Such fear of poliomyelitis' crippling potentialities is altogether justified of course. For hardly anything or anybody is more pathetic than a crippled child. But what

are the chances that a given infantile paralysis patient will suffer permanent injury of this kind?

The National Foundation for Infantile Paralysis has made pretty exhaustive studies of this danger. And it has come up with these figures:

Out of every 100 persons who develop poliomyelitis, they say, 50, or exactly half, will recover completely, without a limp or other evidence of the disease's one-time presence in the system. About one-fourth of the total—from 25 to 30 out of our hypothetical 100—will show slight after-effects, noticeable perhaps to a close observer but, in the words of the Foundation spokesman, "not enough to interfere with their leading a practically normal life." Another group, from 15 to 20, will survive the acute phase of the disease only to find themselves permanently crippled to a marked extent. Finally, there are the others, fortunately, a small number, from five to ten, who will not survive at all but will succumb to the disease. It is these of course who keep infantile paralysis in the mortality tables, although to a relatively small numerical extent.

Like several other forms of illness—among them, measles, mumps, influenza, the common cold and yellow fever—poliomyelitis is transmitted by a minutely small infective agent known as a virus. Considerably less is known about viruses than about germs, but this much at least is known, that they are smaller than germs and that they are incapable of growing on a culture medium on which germs thrive. More specifically, a virus, whether of poliomyelitis or of some other disease, will grow only on living tissue, either that of a person or animal or that contained in some special medium.

The poliomyelitis virus is extraordinarily small, even for a virus. Indeed it is one of the most minutely small forms of living matter known to science. Its size has been estimated at about ten or 15 millionths of a millimeter. Expressed another way, it would require two or three million poliomyelitis viruses to make a line one inch long. The usual laboratory filters which readily separate bacteria from the substances in which they develop have no effect upon poliomyelitis viruses, as they pass through them like fish through a sluice.

Anything so extraordinarily small inevitably presents extremely great problems of isolation and study, and that normal difficulty is enhanced by another peculiarity of the poliomyelitis virus. I refer to its inability to grow in most types of animals, not including the human, unfortunately. The usual laboratory animals—white rats, rabbits, guinea pigs, etc.—which prove so helpful in other types of medical research are practically valueless in the study of poliomyelitis' secrets, for the simple reason that they are not susceptible to this disease. This fact of course adds to the expense, as well as the difficulty, of infantile paralysis research. Fortunately, however, humans do not represent the only branch of the animal family which can be attacked by this virus. The discovery that the monkey is also susceptible was made in 1908 by Dr. Karl Landsteiner, of Vienna, which at that time was one of the world's outstanding medical centers. More recently a limited number of special strains of the poliomyelitis virus have been found to be capable of infecting cotton rats and white mice. Credit for first performing this spectacular feat is freely awarded to Dr. Charles Armstrong, of the U. S. Public Health Service. He made this notable contribution to polio research in 1939.

Thanks to the brilliant work of these two and of many of their fellow-laborers in this rich field, it can now be said, as was recently said by a spokesman for the National Foundation for Infantile Paralysis, that, "in spite of difficulties, the virus (of poliomyelitis) has been isolated and to some extent identified."

But isolation and partial identification of the infective virus represent only milestones along the rugged path to the eventual conquest of this great killer and crippler. The studies which unearthed these invaluable bits of knowledge also made some other disclosures which impressed upon the truth-seekers the difficulties which still lay ahead. One of the most sobering of these is the fact that the poliomyelitis virus is extremely tough. Another is that it readily survives extremes of cold and is affected very little, if at all, by germicidal agents. Thus it has been necessary to attack it from other angles. Fortunately, it has been attacked successfully by formalin, ultra-violet rays,

compounds of certain heavy metals, hydrogen peroxide and other strong oxidizing agents and heat. Health workers and engineers are interested in the possibility—it is not more hopeful than that at present—of curbing poliomyelitis by destroying the infantile paralysis virus with the chlorine used to purify public water supplies.

Another rather disconcerting fact about the polio virus is that it can remain alive for a considerable time away from living tissue. Laboratory tests have shown that it can and does remain active for as long as 114 days in sterile water and 31 days in milk. It does not reproduce under such conditions but remains a powerful potential danger to anyone who may subsequently be attacked by it. It has also been learned that it attacks only nerve cells, known as neurons. Other areas of the body appear to be immune.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

YEAR 1947

Examinations for diphtheria bacilli and Vincent's	4,899
Agglutination tests (typhoid, Brill's and undulant fever)	12,058
Typhoid cultures (blood, feces and urine)	10,248
Examinations for malaria	7,853
Examinations for intestinal parasites	32,801
Serologic tests for syphilis (blood and spinal fluid)	308,304
Darkfield examinations	455
Examinations for gonococci	39,349
Examinations for tubercle bacilli	25,448
Examinations for meningococci	17
Examinations for Negri bodies (microscopic)	1,320
Water examinations	15,853
Milk and dairy products examinations	33,909
Miscellaneous	5,284
Total	497,798

JANUARY 1948

Examinations for diphtheria bacilli and Vincent's	406
Agglutination tests (typhoid, Brill's and undulant fever)	720
Typhoid cultures (blood, feces and urine)	337
Examinations for malaria	337
Examinations for intestinal parasites	2,617
Serologic tests for syphilis (blood and spinal fluid)	27,079
Darkfield examinations	25
Examinations for gonococci	2,557
Examinations for tubercle bacilli	2,171
Examinations for meningococci	2
Examinations for Negri bodies (microscopic)	85
Water examinations	1,168
Milk and dairy products examinations	2,451
Miscellaneous	516
Total	40,471

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND

DEATHS FROM CERTAIN IMPORTANT CAUSES

FOR NOVEMBER 1947, AND COMPARATIVE RATES

FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During Nov. 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	6552	**	**	26.6	32.3	21.5
Stillbirths	204	**	**	30.2	19.9	28.8
Deaths, exclusive of stillbirths	2048	1167	881	8.3	7.9	7.9
Infant deaths:						
under one year	236	128	108	36.0	30.4	47.1
under one month	174	97	77	26.6	21.8	31.9
Typhoid and paratyphoid 1, 2					0.4	0.8
Epidemic cerebrospinal meningitis 6					1.6	1.6
Whooping cough 9	5	1	4	2.0	1.2	0.4
Diphtheria 10	2	2		0.8	1.2	2.9
Tuberculosis, all forms 13-22	71	22	49	28.8	40.1	38.1
Malaria 28	1		1	0.4	0.4	0.4
Syphilis 30	26	8	18	10.5	8.9	10.2
Influenza 33	16	8	8	6.5	7.3	13.5
Measles 35	1	1		0.4	0.4	
Typhus fever 39						1.2
Cancer, all forms 45-55	171	118	53	69.3	73.8	69.6
Diabetes mellitus 61	21	12	9	8.5	9.3	14.7
Pellagra 69	11	8	3	4.5	1.6	3.3
Alcoholism 77	1	1		0.4	0.4	0.8
Intracranial lesions 83	197	108	89	79.8	79.8	67.5
Diseases of the heart 90-95	519	334	185	210.3	182.8	157.2
Diseases of the arteries 96-99	32	16	16	13.0	10.9	7.8
Bronchitis 106	2	2		0.8	2.4	2.9
Pneumonia, all forms 107-109	71	31	40	28.8	27.2	42.2
Diarrhea and enteritis (under 2 years) 119	8	7	1	3.2	4.5	5.3
Diarrhea and enteritis (2 and over) 120	3	2	1	1.2	2.0	2.9
Appendicitis 121	5	1	4	2.0	3.6	2.5
Hernia and intestinal obstruction 122	11	4	7	4.5	5.3	7.8
Cirrhosis of the liver 124	13	7	6	5.3	3.2	4.9
Nephritis, all forms 130-132	171	85	86	69.3	51.1	64.7
Diseases of puerperal state 140-150	14	6	8	20.7	14.8	27.7
Puerperal septicemia 140, 142a, 147	2	1	1	3.0	4.9	7.4
Suicide 163-164	23	18	5	9.3	6.9	7.0
Homicide 165-168	38	10	28	15.4	15.4	9.8
Accidents, all types 169-195	160	113	47	64.8	73.8	60.6
Motor vehicle accidents 170	73	56	17	29.6	26.3	25.8
All other known causes	334	203	131	135.4	122.0	123.2
Ill-defined and unknown causes 199,200	121	39	82	49.0	52.3	62.2

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); from specific causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the November report of the years specified.

**Not available.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

	Dec. 1947	Jan. 1948	E. E.* Jan.
Typhoid	1	0	4
Typhus	8	7	33
Malaria	26	12	75
Smallpox	0	0	1
Measles	44	47	157
Scarlet fever	54	88	98
Whooping cough	145	135	84
Diphtheria	42	35	37
Influenza	447	2561	1676
Mumps	28	79	116
Poliomyelitis	1	3	2
Encephalitis	0	0	1
Chickenpox	127	228	166
Tetanus	2	1	2
Tuberculosis	187	178	199
Pellagra	5	1	7
Meningitis	7	9	11
Pneumonia	222	580	593
Syphilis	1031	1439	1042
Chancroid	14	11	10
Gonorrhea	463	563	420
Tularemia	4	2	1
Undulant fever	9	6	2
Amebic dysentery	0	2	0
Cancer	223	222	0
Rabies—Human cases	1	0	0
Positive animal heads	34	28	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

Contributed by

J. C. Clarke, M. S. in S. E.

Prin. San. and Pub. Health Eng.

STUDIES ON THE EFFECTIVENESS OF DDT
RESIDUAL HOUSE SPRAYING IN THE
CONTROL OF HOUSE FLIES

During the 1947 insect season, inspections were made of houses in those areas of the state where the DDT residual house spraying program was being carried out. The major purpose of these inspections was to determine the effectiveness of DDT in controlling malaria transmission by destroying the malaria transmitting (*Anopheles quadrimaculatus*) mosquito inside treated houses. During these inspections, information was also collected regarding the prevalence of house flies. An actual count or estimate was made of the number of house flies present inside the treated house.

Three distinct studies were carried out during 1947. For purposes of clarity, these studies will be discussed separately.

SINGLE TREATMENT AREA, MACON COUNTY

During 1946 and 1947, the recommended procedure was to treat the houses twice. The first treatment was made during the period March-June and the treatment re-

peated during the period July-September. The dosage of DDT was 200 milligrams per square foot or one quart of a spray containing 5 percent DDT per 240 square feet. Limited experience under field conditions had shown that the above standard treatment was effective in the control of malaria transmitting mosquitoes and certain other insects for at least four months. Laboratory studies had also shown and field observation had confirmed the fact that the standard dosage of DDT was effective for periods in excess of four months.

In order to study, under field conditions, the effectiveness of a single treatment and the desired dosage of DDT, an area was selected in Macon County. Four crews were assigned to the area on April 14 and spraying operations in all beats were completed on May 6. Only one house treatment was made and all houses in each beat were treated with the same amount of DDT. The amount of DDT used in the various beats is given in the table which follows. Observations were made in other portions of Macon County which had not been treated with DDT. This untreated area is referred to in the table as "Control or Untreated Area."

AVERAGE NUMBER OF HOUSE FLIES PER HOUSE

Date of Inspection	Beat No. 6 250* 5 Houses	Beat No. 10 308* 2 Houses	Beat No. 8 363* 5 Houses	Beat No. 7 400* 8 Houses	Control or Untreated Area 10 Houses
May 23	—	—	—	—	146
June 10	0.0	—	—	0.0	—
June 18	0.0	0.0	—	0.0	—
July 2-3	0.4	0.0	0.6	0.0	208
July 17-21	1.4	1.5	2.0	0.6	110
Aug. 4-5	1.0	3.0	1.7	1.0	125
Aug. 18-27	0.8	0.5	2.2	1.1	154
Sept. 15-16	0.2	3.0	3.3	0.6	146
Sept. 29-30	0.6	0.0	1.2	0.0	143
Oct. 14-15	8.4	7.0	2.2	3.9	—
Oct. 21	—	—	—	—	141
Nov. 6-7	2.2	1.0	2.6	0.7	—
Nov. 10	—	—	—	—	171
Average	1.7	1.9	2.0	0.9	147

*Milligrams per square foot; 200 milligrams per square foot is the standard dosage; April 23 was average date when houses were treated.

From the above table it will be noted that seven months after a single house treatment was made, the average number of flies in the treated houses varied from 0.9 to 2.0 as compared to 147 flies per house in the untreated area. These inspections were made by the entomologists assigned to the statewide cooperative house spraying program.

STANDARD DOSAGE AREA

In 1947, inspections were made by the entomologist and supervisory personnel of 783

houses in the various areas of the state that were included in the house spraying program. These houses had been treated with the standard dosage of DDT, namely 200 milligrams per square foot or one quart of a spray containing 5 percent DDT per 240 square feet. The results of these 783 inspections are summarized as follows:

302 houses or 38.6% contained no flies
290 houses or 37.0% contained 1 to 5 flies
108 houses or 13.8% contained from 6 to 10 flies
42 houses or 5.4% contained from 11 to 20 flies
24 houses or 3.1% contained from 21 to 40 flies
17 houses or 2.1% contained from 41 to 75 flies
0 houses or 0.0% contained over 75 flies

From the above summary it will be noted that 75.6% of the houses inspected contained less than 6 flies.

Of the 783 inspections, sixty-one percent were made three months after the houses were treated and the remaining thirty-nine percent were made of houses that had been treated from three and one-half to six months. These inspections definitely indicate that the number of flies found in houses up to six months after treatment is due to two principal factors; namely, (1) presence of heavy fly breeding areas near the house, and (2) variations in spraying technique.

MUNICIPAL HOUSE SPRAYING PROGRAM, TUSKEGEE, ALABAMA

On May 26, 1947, the City of Tuskegee began DDT residual house spraying operations to treat all occupied houses within the corporate limits. The standard treatment of 200 milligrams of DDT per square foot was employed and the work was completed during the latter part of June.

In order to determine the effectiveness of a municipal DDT residual house spraying program in the control of house flies inside of treated houses, two areas were selected for observation. The Eli Crossing Area and the Edward's Quarters Area were located respectively about one-half mile northwest and one-half mile east of the Court Square. The houses selected were typical of the houses occupied by people of the low income group. Most of the houses had inadequate screening and in no case were the screens of any practical value in preventing the entrance of house flies. The results of these observations are summarized in the following table. Houses 1-5 are located in the Eli Crossing Area and Houses 6-10 are located in the Edward's Quarters Area.

NUMBER OF FLIES FOUND IN EACH HOUSE

Date of Inspection	House No. 1	House No. 2	House No. 3	House No. 4	House No. 5
July 8	1	2	0	3	18
Aug. 8	0	5	2	0	8
Sept. 11	1	45	1	3	18
Oct. 1	0	0	7	0	7
Oct. 23	5	8	8	5	75
Total	7	60	18	11	126
Average per Inspection	1.4	12.0	3.6	2.2	25.2

NUMBER OF FLIES FOUND IN EACH HOUSE

Date of Inspection	House No. 6	House No. 7	House No. 8	House No. 9	House No. 10
July 8	0	5	5	0	1
Aug. 8	0	1		0	3
Sept. 11	1	1	0	13	0
Oct. 1	0	0	0		0
Oct. 23	0	3	0	0	0
Total	1	10	5	13	4
Average per Inspection	0.2	2.0	1.3	3.3	0.8

The average number of flies found per house per inspection was 5.3. Excluding house No. 5, which presented an unusual situation for fly production and entrance to the house, the average is 3.0. As previously brought out the average number of flies per inspection in the untreated areas of Macon County is 147. It can therefore be assumed that the spraying program accounted for a 96.4% reduction in the number of flies in the treated houses of Tuskegee.

Four observations were also made of untreated garbage and trash areas in the vicinity of three business establishments located in close proximity to the Court Square. The average number of flies found on each inspection was 113, the minimum number was 15 and the maximum number was 500. These inspections were made by the entomologists and the County Sanitation Officer.

SUMMARY

1. The results of the studies in Macon County reveal that satisfactory control, from a health aspect, of malaria transmitting mosquitoes and house flies can be obtained under field conditions by a single application of a spray containing 5 percent DDT at the rate of one quart per 240 square feet, which is a dosage of 200 milligrams per square foot. The average number of flies per house per inspection in the treated area varied from 0.9 to 2.0 as compared to 147 for the untreated area.

2. Inspections of treated houses in other areas of the State showed that 75.6% of the houses had less than 6 flies.

3. The average number of flies per treated house in the City of Tuskegee was 5.3 and when house No. 5 is excluded the average is reduced to 3.0.

BOOK ABSTRACTS AND REVIEWS

Minor Surgery. By Frederick Christopher, B. S. M. D., F. A. C. S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. Sixth edition. Cloth. Price, \$12.00. Pp. 1,058, with 937 illustrations on 596 figures. Philadelphia & London: W. B. Saunders Company, 1948.

This, the sixth edition of Doctor Christopher's *Minor Surgery*, covers in great detail all of the problems that might fall in this category. As is pointed out in the preface, the fields of minor and major surgery often spill over into each other and the distinction between them is sometimes difficult if not impossible. However, the author handles his subject with such skill that there is little if any overlapping. Whenever the discussion of any given topic begins to encroach upon the realm of major surgery, then and there it ceases to be discussed and is relegated to its proper place.

This volume will be of great interest and value to the general practitioner who might not have access to a large hospital or the services of a surgical specialist and to the operator who has not been able to serve a long period in training to qualify him for the more formal and difficult operative procedures. There is nothing minor in minor surgery and the failure to properly handle some minor sign or symptom may lead to serious consequences. One would do well to take seriously Maisonneuve's quotation at the beginning of the volume and which reads, when translated from the French, "It is through the study of minor surgery that the surgeon begins his apprenticeship."

The volume is composed of twenty-five chapters, beginning with a discussion of closed wounds and ending with a chapter on the surgical intern, his duties and responsibilities and the duties the staff man owes to him. At the end of each chapter there is an excellent bibliography of references and for more detailed consideration of any given discussion the reader is referred to them. The writer has succeeded in compiling into this volume many of the latest advances in surgery and it would almost seem that in its 1000 pages all of recent interest and value has been included from the current literature.

Much is in fine print, many procedures for diagnosis and treatment are given, and although it is not within the scope of this present discussion to include all of them, there are some that deserve special mention and comment because of their everyday nature and importance.

The author discusses the limitations of sulfa drugs locally and their use together with the antibiotics in open wounds. Attention is called to the beneficial effects of the sulfa drugs, zinc

peroxide, parachlorophenol and the antibiotics, penicillin and tyrothricin in infected wounds. The value of penicillin in acute osteomyelitis, burns, furuncles, gas gangrene, anthrax and actinomycosis and the use of streptomycin in tularemia are pointed out.

The sections on vascular diseases are worthy of special consideration. Full discussion of Buerger's and Raynaud's diseases and other vascular phenomena is given. The notes on thrombophlebitis and phlebothrombosis have been extensively revised, including a differentiation between the two conditions, the use of anticoagulant therapy (Heparin/Pitkin and dicumarol), the technic of lumbar sympathetic block with novocain, its value and the prophylaxis of pulmonary embolism by femoral vein interruption. Indications for femoral and caval section with sites of ligation are given.

Other material of interest includes the use of absorbable hemostatic agents in the control of hemorrhage, early postoperative ambulation, the value of procaine in serum sickness, identification of various snake bites by the bite pattern, refrigeration anesthesia, the use of aluminum paste in bowel fistulae, treatment of malignant melanoma, the excision and closure of bedsores, placement of neck incisions, glomus tumors and the combined use of the sulphonamides and soda bicarbonate. This volume is to be recommended to each and every practicing physician, for the writer not only tells what to be done in the field of minor surgery but how to do it.

Robert C. Day, M. D.

A Manual of Pharmacology: And Its Application to Therapeutics and Toxicology. By Torald Sollmann, M. D., Professor Emeritus of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Seventh edition. Cloth. Price, \$11.50. Pp. 1,132. Philadelphia and London: W. B. Saunders Company, 1948.

If your library is to contain only one book on pharmacology, the reviewer would recommend that that book be Sollmann's *Manual of Pharmacology*, and he would also recommend that the edition be kept up to date since progress in the field of pharmacology and therapeutics is now progressing at a rate never known before in the history of medicine. It has been six years since the appearance of the sixth edition of Sollmann's *Pharmacology* and these six years have witnessed the introduction of the antibiotics, the anticoagulants, new antimalaria drugs, the antithyroids, the antihistamines and standardized preparations of curare and digitoxin. During this six-year period the U. S. Pharmacopeia and Na-

tional Formulary have been revised with certain changes in accepted terminology and standards.

The author attempts to present a brief but comprehensive description of pharmacologic and therapeutic aspects of all drugs of proved value. The material is of two types: that which is considered most important, presented in large print, and that which is of lesser importance but occasionally of value for a specific purpose, in fine print. Sections are divided according to pharmacologic classifications but the index makes it easy to find any thing desired. Even drugs which are not accepted by the Pharmacopeia or National Formulary are described at least briefly while drugs which have withstood the test of time are given more space and their pharmacologic action described in much more detail.

This work has become such a tremendous task that at times the author seems to have used bad judgment in his selection of material, but on the whole one finds almost everything he wants to know about any drug he may be interested in. If more detail is desired, there is a bibliography of about 100 pages giving reference to the original articles from which the material is taken.

No one who uses a drug can afford to do so without a complete understanding of the action of the drug if he hopes to understand not only its most important therapeutic applications but also its side effects, its toxicology, and its untoward reactions.

C. K. Weil, M. D.

Brief Psychotherapy. By Bernard S. Frohman. With the Collaboration of Evelyn P. Frohman. Cloth. Price, \$4.00. Pp. 253. Philadelphia: Lea & Febiger, 1948.

Those who take up this book, enticed by the "capsule" appeal of its title, will no doubt be disappointed if they are searching for an exhaustive review of the briefer forms of psychotherapy. Fortunately, despite the misleading emphasis on therapy in the title, the book's greatest portion and greatest value lies in the simplified analytically slanted review of the neuroses, for the book is primarily designed to serve the needs of the busy physician with a desire to learn something of the dynamics behind these disorders. Of considerably less value is that portion devoted to therapy since the material is inadequate to contribute a great deal to the armamentarium of the uninitiated except as it underscores the trend toward briefer forms of analytical therapy. The author describes his experience with several techniques hybridized from among the currently conventional ones described in any modern psychiatric text. Since brevity here as elsewhere is a relative term and since the author fails to document his claims with statistics, the skeptical novice may be prone to discard the book as being a trifle irresponsible. In this he would be doing himself a disservice.

The foreword, written by Dr. Walter C. Alvarez, repeats without innovation and without redundancy the plea for a greater psychiatric orientation in the profession at large. It is regrettable that Dr. Alvarez has injected a jarring note in indicting certain psychiatrists who are

"full of Freudian interpretations which disgust the average sensible physician" (sic!). Such unscientific pontification is presumptuous and might lend itself to one such interpretation.

The first five chapters are devoted to brief descriptions of the various schools of analytic thought, to neurotic mechanisms to the classification, etiology and function of the neuroses and to the neuroses encountered in the specialties. This larger portion of the book is clearly written, adhering rather closely to Freudian dynamism with a minimum of analytic verbiage and theorization. The interested busy physician will find no cause to panic as he might with many elementary books on Freudian psychology which are so prone to launch into the basic theoretical foundations of psychoanalysis so foreign to the neat patterns of thought which medical schools are at such pains to inculcate into the student.

The sixth and final chapter is devoted to the author's description of his preferred therapeutic techniques. In essence, he leans heavily on brief directed analysis. The reader should be wary in accepting the implication that twenty to thirty analytic hours will do the trick. The author points out at the close of this chapter some of the reservations with which he advocates these procedures but with insufficient emphasis to provide the newcomer with a sound recognition of their limitations. The use of the science of semantics as a therapeutic aid is one not frequently included in psychiatric texts but which, in the reviewer's opinion, should be more generally recommended. A modest, if dated bibliography and a glossary complete this handbook.

Philip S. Bazar, M. D.

If streptomycin were perfectly harmless, it could be given to every patient with active tuberculosis regardless of the nature and extent of the tuberculous disease and its complications. However, streptomycin is not perfectly harmless. This must not discourage us, since many of our most useful drugs are injurious if given unwisely. —James J. Waring, M. D., J. A. M. A., Jan. 31, 1948.

Periodic group chest x-rays are of value to industry through the detection of early cases of tuberculosis, whereupon a leave of absence for treatment, followed by assignment to duties with less exacting physical demands can be arranged. Also, the chest survey may give the first indication of progressive heart disease and be the clue leading to the removal of a man from arduous physical work.—Rodney R. Beard, M. D., *Nat. Tuberc. A. Tr.*, 1947.

More effectively than any other approach, medicine and public health can build a conception of common human need, of the single destiny that awaits life on this planet, whether it be good or evil. We are members of one human family, fighting the same enemies of disease and suffering. Only by united effort can we survive, and the field of public health can be a practical demonstration of a new kind of teamwork.—Raymond B. Fosdick. *Am. J. Pub. Health*, Jan., 1948.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

May 1948

No. 11

SCALENUS ANTICUS SYNDROME

A CONSIDERATION OF DIAGNOSIS AND TREATMENT

NATHAN BOGRAD, A. B., M. D.

And

GEORGE S. PETERS, A. B., M. D., F. A. C. S., F. I. C. S.

Montgomery, Alabama

Since attention was drawn to the cervical rib by Murphy in 1905 as a factor in symptoms of the scalenus anticus syndrome, considerable literature has appeared which has surveyed the problem from embryology through rheumatology, orthopedics and psychiatry.

Ochsner, Gage and DeBakey in 1935 brought forth as a definite clinical entity the syndrome the symptoms of which were produced by contraction and spasm of the scalenus anticus muscle, narrowing and shortening and overcrowding an area containing vessels, nerves and sympathetic structures. The symptoms of the syndrome are not unlike symptoms which are produced in pathologic changes to structures found from the level of the spinal cord segments to those within the thoracic cage; and must be differentiated from myelitis, progressive muscular atrophy, pressure on nerves in the intervertebral foramina, peripheral neuritis, cervical sympathetic sympathology, paralysis and aberrant phrenic nerve spasm of the diaphragm, Raynaud's disease, subacromial bursitis, damage to the spinal accessory nerve with paralysis of the trapezius, pneumothorax and, finally, neurosis. A rapid method of diagnosis which would eliminate the multiple symptoms of the syndrome is all important. If one bears in mind that pressure may be brought on vessels, nervous and sympathetic structures, either separate-

ly or in a varying combination, it is easily understandable why the symptoms may be simple, perhaps no more than a persistent hemicranial pain, or complex, often bizarre, ending in such marked disturbances as gangrene of the hand or even the forearm.

It is usual to divide these symptoms into circulatory, nervous and sympathetic disturbances:

(1) Circulatory disturbances may be sufficient only to alter the blood pressure, bring on cyanosis or pallor to the skin, or severe with thrombosis of the subclavian, radial or ulnar artery with resulting gangrene.

(2) The nervous disturbances may be mild, with numbness, hyperesthesia, paresthesia, and anesthesia; or severe with atrophy of the small muscles of the hand.

(3) Sympathetic disturbances usually involve the vascular structures of the distal part of the extremity without affecting the proximal. We wish to limit this paper only to the symptoms produced by the scalenus anticus muscle, whether in hypertrophy or spasm, whether the cause is primary, as in a myositis, or secondary due to continued pressure by a cervical rib or small multiple traumatic insults due either to occupation or faulty mechanics which ends, finally, either with abnormally low position of the shoulder or a high fixation of the sternum and ribs.

Trauma to the scalenus muscle is the most important single factor. The earliest symptoms are due to trauma occurring during

childbirth (parturition torticollis—Cope-land), the only symptom of which is the inclination of the head to the affected side. In other cases the symptoms may come on slowly and unremittingly during childhood, to continue over a period of many years, with occasional pain or cramps in the arm and hand, to appear finally with great severity in adult life if the occupation is such as to increase the trauma to the scalenus muscle; or it may come on suddenly after severe traumatic insults.

Several means of diagnosis have been evolved. The most consistent and reliable are pain produced on pressure over the muscle and relief of pain following injection of novocaine into the muscle. We prefer to base our diagnosis on the injection method since the patient usually has difficulty in evaluating the pressure as pain but is in no doubt as to relief of pain. Two to four cc. of 2% novocaine solution are injected into the scalenus muscle at the level of the sixth cervical vertebra and if the results are not too certain an additional injection of novocaine is made into the muscle at the level of the third and fourth cervical vertebrae. The only precaution in evaluating the relief of symptoms is that one must be certain that the sympathetic ganglion has not been injected. If even a mild Horner's syndrome appears it is well to repeat the injection within twenty-four hours, for sympathetic relief of painful symptoms will usually occur even when it is not involved. The relief of pain following injection is satisfactory both to the surgeon and to the patient. The pain will disappear in a few minutes and may last several hours and can easily and safely be repeated many times until the patient is ready for surgery. No other method is so convenient and no other drug more efficacious. It will at almost one stroke bring order out of what seems to be a complicated chain of symptoms.

The anterior approach is used. The skin incision is made in the right supraclavicular fossa, parallel and 2 cm. above the clavicle, extending from the lateral border of the sternomastoid to the medial border of the trapezius muscle. The incision is carried through the skin and platysma muscle, following which the clavicular portion of the sternocleidomastoid is retracted medially. By blunt dissection the belly of the omo-

hyoid muscle is identified and the phrenic nerve exposed (if on the left the thoracic duct is also exposed). The scalenus is sectioned and a part removed. The platysma and, finally, the skin are approximated. The following day the patient is ambulant, with arm in a sling; and physiotherapy is instituted to hasten resolution of postoperative swelling in the tissues. The cases that are being reported were all done under general anesthesia.

REPORT OF CASES

Case G. C. G.—54 year old, white male, printer operator complaining of pain in the right anterior chest wall, dull aching in the right arm and forearm and hand, with inability to use the first finger. Onset began five months previously with constant sharp pain in the right anterior chest, not aggravated by deep breathing and not associated with fever or cough. He had been treated elsewhere for pleurisy and the pain subsided after three weeks only to return suddenly in the right arm and forearm and continue as a dull aching pain radiating down the middle aspect of the right arm to the fourth and fifth digits; there were variations in degree of pain, often so severe as to make it impossible to move the arm. Except at one time he had a temperature 102 degrees for two days which subsided spontaneously. He noticed that turning the head from side to side made the condition worse. He was treated for brachial neuritis for several weeks with subsidence of the acute pain but the aching sensation in the right arm continued, with progressively increasing weakness, tingling and numbness of the right hand and fingers, and inability to flex and extend completely the fingers, with no complete paralysis. The patient had had pulmonary tuberculosis in 1924 and was hospitalized for four years and discharged as arrested. He has been well since then with no signs or symptoms referable to the lesion. Physical examination revealed inability to raise the right arm above a 50 degree angle because of pain; atrophy of the interossei and hyperthenar muscles of the right hand, inability to flex and extend the right index finger fully; decreased sensation to light touch, inability to hold a pencil between thumb and index finger or pick up small objects; reflexes were normal. There was marked pain in the right axilla. Blood

pressure: right 130/70, left 114/80. All laboratory tests were negative. X-ray revealed no chest pathology or cervical rib. The scalenus anticus muscle was injected with 5 cc. of 2% novocaine which brought marked relief of symptoms. At the operation the scalenus anticus was in spasm and hypertrophied.

1st day postoperative. Complained of numbness and a tingling sensation along the course of the ulnar nerve.

5th day. Swelling subsiding, numbness and tingling in the right index finger (pressure still present in supraclavicular fossa).

12th day. Purulent drainage which subsided two days later following penicillin therapy.

14th day. Swelling of the right index finger and dull pain in the right forearm.

18th day. Wound healed, pain and stiffness in right index finger.

28th day. Stellate ganglion block with considerable relief. Able to use index finger. Repeated two days later with greater improvement.

The patient was discharged and seen one month later. There was no pain although there was some stiffness in the index finger. He is now able to grasp a piece of paper firmly. He is unable to flex the forefinger at the first joint. After several hours of work at setting type there is a tingling sensation down the middle finger, and there is numbness over the deltoid and biceps and disturbance of sensation, with burning or stinging sensation through the neck and down the forearm. However, the patient rates his improvement as fifty percent.

Case A. B. J.—A 25 year old, white male, complaining of pain, coolness, numbness and slight swelling of the left upper extremity. Symptoms began eighteen months before admission while at work at a printing press as a feeder, which necessitated pushing a lever down and back. He felt severe pain in the left upper chest, and the left arm became sore and weak. He remained in bed for three days and returned to work three weeks later with good function of the left arm. Three months later the symptoms returned while he was lifting a small weight off a shelf above shoulder height. He recovered completely four weeks later. One year later the same symptoms recurred, and he was unable to work for five weeks. A

few weeks after returning to work and while attempting to pick up a heavy weight, even before he exerted the necessary force, the symptoms occurred and in addition he had numbness of the hand. Examination of the left upper extremity revealed some impairment of grip; it was cooler than the right, with a violaceous discoloration. There was an impression of soft tissue swelling over the clavicle and towards the base of the neck. Pressure over the scalenus brought pain down the arm, which was also reproduced by hyperextension of the neck. Injection of 5 cc. of 2% novocaine into the scalenus removed the pain, and the patient was able to move the arm with some comfort. Immediately after recovering from the anesthetic, all pain and discomfort disappeared and so remained upon discharge three weeks later. All laboratory tests were normal, and x-ray reports of the cervical spine showed a minute fragment of bone adjacent to the lateral margin of the left transverse process of the first dorsal vertebra, possibly due to an old periosteal tear. There was partial lumbarization of the first sacral segment, with borderline acuity of the angle of the lumbosacral joint. At the operation the scalenus was found to be hypertrophied and in spasm.

Case I. D. P.—A 30 year old, white policeman. Symptoms first appeared about six months before admission as pain over the left shoulder radiating to the left scapula, left pectoralis muscles, medial aspect of arm, and down the hand to the second and third fingers. The patient stated that the pain seemed to be in the "muscles and nerves." He has had intermittent attacks which were not so severe. Upon admission he said the pain was over the left upper part of the forearm, with numbness in the second and third fingers. Changing position of the extremity did not have any effect on the symptoms. Physical examination revealed a diminished left radial pulse, when compared to the right, and increased pain when the head was rotated to the opposite shoulder. Pressure over the scalenus anticus was extremely tender. All laboratory tests were negative. X-rays showed unusually large transverse processes of the seventh cervical vertebra and slight levorotatory scoliosis of the upper dorsal spine. Conservative management was given a trial, consisting of

novocaine injections of the scalenus anticus and trapezius, physiotherapy and exercises, with no marked improvement. Scalenotomy was performed. No abnormalities were noticed. The patient was discharged ten days after operation with a mild dull ache over the upper arm but he felt that the improvement was marked though the symptoms had not entirely cleared.

COMMENT

Any symptomatology which arouses suspicion of a scalenus syndrome should be the first possibility ruled out rather than the last. We have seen where palliative treatment or no treatment will bring about subsidence of the symptoms from several weeks to several months, and in the meantime insidious trophic changes occur, the reversal of which is impossible. While it might be considered hasty to operate after the first attack, certainly the second should not be endured to pass without scalenotomy. Exercises, physiotherapy, rest and support, or novocaine injections will not be of value in many cases and certainly should not be considered where several attacks have occurred. Indeed, active conservative treatments yield no better results than no treatment.

SUMMARY

- (1) The literature was reviewed and the most salient symptoms enumerated.
- (2) A rapid and most satisfactory method of diagnosis was presented and operation described.
- (3) Three cases were presented, the most unusual feature being that two of the cases were left scalenus anticus syndrome.

BIBLIOGRAPHY

1. Adams, R.: The Management of the Cervical Rib Syndrome, *S. Clin. North America*, June '45.
2. Adson, A. W.: Surgical Treatment of Cervical Ribs, *Texas State J. Med.*, 28: 739-747 (March) 1933.
3. Barnes, H. A.: Scalenus Anticus Syndrome, *U. S. Nav. M. Bull.* 44: 773-776 (April) '45.
4. Brown, L. T., & Kuhns, J. G.: Extension Deformities of the Cervical Spine, *J. Bone & Joint Surg.* 24: 329-340 (April) '42.
5. Brown, M. H.: Secondary Scalenus Anticus Syndrome, *U. S. Nav. M. Bull.* 42: 1164-1165 (May) '44.
6. Carroll, W. C.: Cervical Ribs and Abnormal First Thoracic Ribs, *Minnesota Med.* 15: 828 (Dec.) '32.
7. Collins, C. C.: Cervical Ribs, *Am. J. Surg.* 15: 449-451 (Nov.) '31.
8. Copeland, S. M.: The Scalenus Anticus Factor in Congenital Torticollis, *Surgery* 11: 624-631 (April) '42.
9. Craig, W. McK., & Knepper, P. A.: Cervical Rib and the Scalenus Anticus Syndrome, *Ann. Surg.* 105: 556 (April) '37.
10. Donald, J. M., & Morton, B. F.: The Scalenus Anticus Syndrome With and Without Cervical Rib, *Ann. Surg.* 111: 709-723 (May) '40.
11. Gage, M.: Scalenus Anticus Syndrome, *Surgery* 5: 599-601 (April) '39.
12. Hammes, E. M.: The Scalenus Syndrome: Brachial Plexus Neuritis, *Minnesota Med.* 23: 377 (May) '40.
13. Hansson, K. G.: The Cervico-Brachial Syndrome, *Arch. Phys. Therapy* 22: 662-666 (Nov.) 1941.
14. Hansson, K. G.: Scalenus Anticus Syndrome, *S. Clin. North America*, April '42.
15. Hoobler, S. W.: The Syndrome of Cervical Rib with Subclavian Arterial Thrombosis and Hemiplegia Due to Cerebral Embolism, *New England J. Med.* 226: 942-944 (June 11) '42.
16. Jelsma, F.: Scalenus Anticus Syndrome, *Kentucky M. J.*, Feb. '41.
17. Judovich, B. D., & Bates, W.: The Scalenus Anticus Syndrome, *J. Internat. Col. Surg.*, Jan.-Feb. '42.
18. Judovich, B. D., & Bates, W.: The Scalenus Anticus Syndrome, *Am. J. Surg.* 57: 523-524 (Sept.) '42.
19. Judovich, B.; Bates, W., & Drayton, W., Jr.: Pain in the Shoulder and Upper Extremity Due to Scalenus Anticus Syndrome, *Am. J. Surg.* 63: 377-381 (March) '44.
20. Kasman, L. P., & Bernstein, W.: Cervical Ribs, *Am. J. Surg.* 30: 372-375 (Nov.) '35.
21. Love, J. G.: The Scalenus Anticus Syndrome With and Without Cervical Rib, *Proc. Staff Meet., Mayo Clin.* 20: 65 (March 7) '45.
22. Naffziger, H. C., & Grant, W. T.: Neuritis of the Brachial Plexus Mechanical in Origin, *Surg., Gynec. & Obst.* 67: 722-730 (Dec.) '38.
23. Ochsner, A.; Gage, M., & DeBailey, M.: Scalenus Anticus (Naffziger) Syndrome, *Am. J. Surg.* 28: 669-693 (June) '35.
24. Patterson, R. H.: Surgery for Cervical Ribs, *Ann. Surg.* 102: 972-979 (Dec.) '35.
25. Patterson, R. H.: Cervical Ribs and the Scalenus Anticus Syndrome, *Ann. Surg.* 3: 531-545 (April) '40.
26. Pommerenke, W. T., and Risteen, W. A.: The Scalenus Anticus Syndrome as a Complication After Gynecologic Operations, *Am. J. Obst. & Gynec.* 47: 395-401 (March) '44.
27. Reichert, F. L.: Compression of Brachial Plexus; the Scalenus Anticus Syndrome, *J. A. M. A.* 118: 294-296 (Jan. 24) '42.
28. Robinson, S.; Stone, C. S., Jr., & Elliot, A. H.: Cervical Ribs, *West. J. Surg.* 43: 295 (June) 1935.
29. Scalenus Anticus Syndrome, *Brit. M. J.*, Dec. 9, 1944.
30. Silbert, S.: Complete Recovery from Serious Vascular Impairment Following Removal of Cervical Rib, *Surgery* 7: 392-395 (March) '40.
31. Swank, R. L., & Simeone, F. A.: The Sca-

lenus Anticus Syndrome, Arch. Neurol. & Psychiat. 51: 432-445 (May) '44.

32. Tanna, J. F.: Scalenotomy, Ann. Surg. 125: 80-88 (Jan.) '47.

33. Theis, F. V.: Scalenus Anticus Syndrome and Cervical Rib, Surgery 6: 112-125 (July) '39.

34. White, J. C., et al.: Congenital Malformations of the First Thoracic Rib, Surg., Gynec. & Obst. 81: 643-659 (Dec.) '45.

35. Wilson, M. J.: Scalenus Anticus Syndrome, Bull. New York Med. Col., Flower & 5th Ave. Hosp. 4: 161-165 (Dec.) '41.

EVIDENCE OF CONTACT SPREAD OF POLIOMYELITIS

ALBERT E. CASEY, M. D.

Birmingham, Alabama

During the summer and fall of 1941, 1945 and 1946, 127 officially reported and 4 unreported cases of paralytic poliomyelitis were investigated. One hundred and three (103) were in Walker County, Alabama, and 28 were in Chicago, Illinois. In 108 of the 131 patients (83%), intimate contact within 5-35 days before onset (usually 7-18 days) could be established with another child believed to have been in the infectious stage of poliomyelitis. The infectious stage of poliomyelitis in 44 children with a single exposure was believed to consist of the last five days of the incubation period, including the day of onset, in 37 and in the first three days after onset in 4. The remaining three children were apparently exposed to another child, 6, 10, and 13 days after onset, respectively.

There were 64 instances of multiple exposure to a child or children thought to be in the infectious stage of poliomyelitis.

In 56 of the 108 instances the disease could be traced to contact with a reported case in its infectious period. However, there was exposure to other children in the same home or neighborhood with minor illnesses believed to be poliomyelitis, and also in their presumed infectious period. Five of the remaining 52 cases were paralytic, 16 were meningismic, and 31 were non-paralytic cases without stiff neck but with clinical disease entirely compatible with poliomyelitis. In Chicago such cases were proven by virus studies on the stool or mouth and throat and/or by delayed spinal punctures with the determination of total protein. In addition, many of the minor illnesses in Ala-

bama to which the cases could be traced had in turn been exposed to a prior reported case of poliomyelitis in its infectious stage. In fact, 68 of the 80 children in Walker County, Alabama, giving a history of contact could be traced from a single case at Barney through from 2-6 generations of the disease. The incubation period in the above varied from 5-35 days, averaged 11, and was usually between 7-18 days. One similar instance of 6 consecutive generations of the disease was traced in Chicago.

The radial spread of poliomyelitis from a focus in Barney, Alabama, through successive 12 day periods was mentioned.

The history of contact with an infectious patient was approximately the same in a rural epidemic (Walker County, Alabama, in 1941, 80 of 99 cases), in an urban epidemic (Chicago, Illinois, in 1946, 14 of 15 cases), and in an urban non-epidemic period (Chicago, Illinois, in 1945, 9 of 12 cases). There did not appear to be any correlation between the premises of the presumably infectious child and the place of contact in either Walker County, Alabama, or Chicago, Illinois.

A second method in the study of the disease was to disregard tracing back the source of the disease in an officially reported case and to set up in the neighborhood of the patient studies of non-contacts, contacts and controls. The field work relied on 4 epidemiologic tools, namely: careful histories, delayed spinal fluid protein determinations, daily temperature determinations, and the collection of stool, throat and mouth specimens. The results of this study indicate that 70-100 per cent of children between 1½ and 7½ years of age intimately exposed to an infectious poliomyelitis patient develop within 7-23 days after exposure an illness thought to be poliomyelitis. All methods

From the Laboratories of the Birmingham Baptist Hospitals.

Presented at a round table conference on The Epidemiology of Poliomyelitis at Yale University, New Haven, Connecticut, February 14, 1947.

seem to give similar results quite independently. By none of the 4 field methods were there detected illnesses compatible with poliomyelitis exceeding 9 per cent in children living in the same block as the patients, but who had no contact with the patient or other children with poliomyelitis-like illnesses; nor in a group of control children living 10 or 50 blocks distant.

Our conclusion is that poliomyelitis is an extremely communicable disease from person to person, that it is generally very mild, almost without symptoms, but that in perhaps 2 per cent of the cases residual paralysis develops. The tendency to severe paralysis increases with advancing years, and modern sanitation and preventive measures may be partly responsible for the increased paralytic diseases by withholding children from the virus until they are at an older and more susceptible age. There is no evidence that flies, or other insects, or even place of contact bears any significant relation to the transmission of the disease. The virus has been demonstrated by our group in the mouth or throat in the late incubation or infectious period (i. e., within 5 days before the onset of the first symptoms) in 75-100 per cent of a small series of cases.

BIBLIOGRAPHY

1. Casey, Albert E.: Observations on an Epidemic of Poliomyelitis, *Science* 95: 359-360 (April 3) 1942.
2. Casey, Albert E.: The Pathology of Poliomyelitis; With Special Reference to Observations in Walker County, Alabama, *J. M. A. Ala.* 12: 2-3 (July) 1942.
3. Casey, Albert E.: The Incubation Period in Epidemic Poliomyelitis, *J. A. M. A.* 120: 805-807 (Nov. 14) 1942.
4. Wenner, Herbert A., and Casey, Albert E.: A Community Study of Carriers in Epidemic Poliomyelitis, *J. Clin. Investigation* 22: 117-125 (Jan.) 1943.
5. Casey, Albert E.: Place of Contact and Radial Spread of Epidemic Poliomyelitis, *Am. J. Dis. Child.* 69: 152-156 (March) 1945.
6. Casey, Albert E.; Fishbein, William I., and Bundesen, Herman N.: Transmission of Poliomyelitis by Patient to Patient Contact, *J. A. M. A.* 129: 1141-1145 (Dec. 22) 1945.
7. Andelman, M. B.; Fishbein, William I.; Casey, Albert E., and Bundesen, Herman N.: Spinal Fluid Protein in the Retrospective Diagnosis of Subclinical Poliomyelitis, *Federation Proc.* 5: 218 (March) 1946 (Abstract). *South. M. J.* 39: 706-718 (September) 1946.
8. Casey, Albert E.; Fishbein, William I.; Abrams, Irving, and Bundesen, Herman N.: Relative Frequency of Subclinical Poliomyelitis, *Am. J. Dis. Child.* 72: 661-674 (December) 1946.
9. Gordon, F. B.; Schabel, Frank M., Jr.; Casey, Albert E., and Fishbein, William I.: Recovery of Poliomyelitis Virus from the Throat During the Incubation Period, *Federation Proc.* 6: 392 (March) 1947. *J. A. M. A.* 135: 884-888 (December 6) 1947.
10. Gordon, F. B.; Schabel, F. M., Jr.; Casey, A. E.; Fishbein, W. I., and Abendroth, M.: Laboratory Studies on the Epidemiology of Poliomyelitis, *Proc. Inst. Med.* 16: 423-424 (June 15) 1947. *Poliomyelitis Current Literature* 1: (No. 10) July 1, 1947.
11. Gordon, F. B.; Schabel, F. M., Jr.; Casey, Albert E., and Fishbein, W. I.: Recovery of the Virus of Poliomyelitis from the Stools of Contacts, Non-Contacts, and Controls, *J. Bact.* 54: 1947 (Abstract).

Pruritis—The procedure we use in the treatment of these cases is simple. We try to give the patient some insight into the cause for his or her itching. Any of the factors that might have acted as the trigger mechanism are dealt with accordingly. We recommend the use of loose-fitting underwear. For men the loose-fitting one-piece garment is excellent, whereas tight shorts and jocky strap shorts are particularly bad. The most satisfactory way to relieve a paroxysm of itching and at the same time soothe the inflamed skin is by means of wet compresses. We use a solution of boric acid and corn starch at room temperature, and advise the maintenance of the pack in position much in the same way that a sanitary napkin is worn. These packs should be worn even during sleep while the condition is severe. Compresses are essential when the area shows evidence of acute irritation by local medication as often the tissues will not even tolerate plain petrolatum. The parts are kept clean by applying a zinc oxide ointment containing benzocaine directly before bowel movements and gently sponging the area afterward with moistened soft toilet tissue or absorbent cotton. A suppository containing benzocaine is inserted twice a day and if there is an area of maceration and dermatitis around the anus or there is involvement of the vulva, then the zinc oxide ointment is applied more often. The benzocaine acts effectively only on the mucous membrane and the muco-cutaneous junction. The hands should be restrained during sleep. The patient is instructed to get up early and not to take naps during the day, to avoid "turning the clock."

Small doses of phenobarbital taken during the day and one hour before bedtime usually do a great deal to help this type of person relax. We find that many women, even though they have ceased menstruating several years previously, still have symptoms of the menopausal syndrome and estrogenic substances are indispensable in the treatment of their condition. The estrogens not only serve to modify the nervous tension but also have a physiological effect upon the skin and mucosa of the area involved.—*Van Studdiford and McLean, New Orleans, M. & S. J., April '48.*

PREGNANCY IN A RUDIMENTARY HORN
WITH CASE REPORT

T. J. PAYNE, JR., M. D.

Jasper, Alabama

Pregnancy in a rudimentary horn resembles ectopic gestation very closely. Mauriceau and Varsal in 1669 recorded the first case. In 1900 Kehrer collected 84 cases from the literature, and now over 100 have been described. If the accessory horn is very rudimentary and closed at both ends, pregnancy, of course, is impossible. Often there is a communication between the cavity of the horn and the tube on its side and it is through this that pregnancy usually occurs. Since there is no communication with the vagina, pregnancy must have followed external migration of the spermatozoa or the ovum. In the former class of cases the spermatozoa pass up through the developed horn, gain access to the pelvic cavity, and then fertilize the ovum, either on the surface of the opposite ovary or within the tube of the rudimentary horn. In the latter, the ovum is fertilized in the neighborhood of the ovary of the normal side, and is then carried to the opposite tube, whence it gains access to the rudimentary horn, in which it undergoes development.

Unless there is free communication between the two horns, which is but rarely the case, a pregnancy in this situation is a very serious occurrence, since it usually eventuates in rupture, which may lead to death from intraperitoneal hemorrhage. This accident usually occurs within the first four months and was noted in 87 and 47.6% of the cases collected by Sanger and Kehrer, respectively, in 1884 and 1900. The marked difference in the percentage is attributable to the greater accuracy in diagnosis and more frequent recourse to operative interference since the appearance of Sanger's work. In rare cases pregnancy may go on to term. In these, the fetus must be delivered by cesarean, be gradually eliminated by suppurative processes, or be converted into a lithopedion.

Rupture is always attended by serious intraperitoneal hemorrhage, which usually ends fatally if operative procedures are not undertaken rather quickly. In the series collected by Kehrer, 82% perished in this way.

If the condition is diagnosed, treatment consists of opening the abdomen and amputating the pregnant horn. Frequently, however, the first suggestion of the existence of the abnormality is afforded by the symptoms of intraperitoneal hemorrhage and an operation is usually performed in the expectation of finding a ruptured extra-uterine pregnancy. The following case is presented because of the rarity of pregnancy in a rudimentary horn and very few such cases go to term as this one did.

CASE REPORT

This patient (Mrs. W. A., age 27 years) first consulted me on October 15, 1947 complaining that she was pregnant and past due. She had been receiving prenatal care from her local family physician. Her last menstrual period began December 16, 1946 and was normal in amount and duration. Estimated date of delivery, calculated from this period, was September 23, 1947. During March there was vaginal bleeding and backache which was treated conservatively and cleared up in 3-4 days. A definite history as to first fetal movements or the last time movements were felt could not be given by the patient. During her pregnancy she had gained weight excessively, which she estimated at fifty pounds.

Physical examination was essentially negative except the uterus was enlarged to the size we would expect to find at a full term pregnancy. No uterine souffle or fetal heart tones were heard. Vaginal examination revealed the cervix to be long, with no effacement or dilatation present. No presenting part could be felt vaginally and there was doubt about it abdominally. There was certainly no evidence of labor and except for her menstrual period and the size of her uterus, one would think that she was not at term. Because of this she was advised to wait two weeks and return for another examination unless pains began in the meantime.

November 3rd she returned and gave a history of having abdominal pains which began in the lower back and radiated to both

sides of the abdomen at irregular intervals on October 19. This occurred practically all day. She hoped to be delivered at home and called her family physician who was not available. By night the pain had disappeared and when examined by her physician the next day she was told there was no evidence that she had been in labor. Since that time there had been a definite discomfort in the lower abdomen but no further pain or cramping. When examined by me about the only noticeable change in this and the previous examination was that the uterus appeared to be lower than before on abdominal examination but the vaginal examination was about the same.

Our technician was not available and the patient was asked to return the next day for x-ray of her abdomen. This she did and the x-ray was made. This revealed a normal size fetus lying in a true transverse position. Because of the lack of cervical dilatation and the lack of confidence in my ability to do an external version, it was thought the best method of delivery was a cesarean section. Two consultants agreed, as did the patient and her family. On November 5th, a section, which was intended to be classical in type, was done under general anesthesia.

OPERATION

The external uterine wall appeared to have a rather dull color in contrast to normally appearing red because of the rich blood supply. Upon opening it this wall was found to be extremely thin and not one muscle fiber was present in its upper portion. A full term, normally developed, still-born male was delivered. Death had, no doubt, occurred several days before as the skin was slipping over the entire body, the skull was showing signs of softening and the umbilical cord was black. A great deal of difficulty was encountered in delivering the placenta which seemed to cover the entire upper two-thirds of the uterus, posteriorly. This was finally separated from the uterine wall and then light could easily be seen through the wall. The uterine incision was closed but there was no contraction of the uterus, the entire upper portion remaining flabby. This, of course, was due to the lack of muscle in the uterine wall.

A hysterectomy was considered, but principally because of the patient's age it was thought best not to do this. It was de-

cided that this uterus should never be subjected to another pregnancy and the simplest, probably safest, method of obtaining this would be a bilateral salpingectomy. The right tube was removed and when attempting to expose the left tube it was found to be attached to a uterus, which appeared to be normal. At about the position one would expect to find the right tube on this uterus, a rather dense fibrous band was found which had contained the fetus and was now recognized as a rudimentary uterus. This rudiment was removed, leaving the normal uterus, both ovaries and the left tube. The abdomen was closed in layers. The pedicle attachment was examined and no opening could be found which would communicate between the true uterus and the rudimentary uterus.

Pathological Report

Uterus and placenta, right tube, mass from second uterus.

Gross Description: Received in formalin specimen is a uterus said to be an accessory uterus attached by a fibrous band to the main portion. It was greatly enlarged and contained a dead fetus with a well formed placenta. There was one fallopian tube and ovary attached to this uterus and one attached to the opposite uterus, in each instance lateral. Axillary uterus weight 500.5 gm. without the placenta. The main uterus and its attached fallopian tube and ovary were said to be entirely normal in appearance and were not removed. Fallopian tube measures 5.5 x 0.5 x 0.6 cm. Fimbriae are patent. Ovary was not removed. There is a fibromuscular mass measuring 1.5 cm., probably attached to the serosa of one uterine fragment. The wall of the uterus is 4 mm. in thickness over a large area. It is otherwise 2 to 3.5 cm. in thickness. The placenta is large, a full term. It is somewhat greenish in appearance and weighs 390 gm. The amnion and cotyledons are somewhat green. There are several areas of hemorrhagic discoloration in the placenta proper. The umbilical cord is small, dark brown and shiny.

Microscopic Examination: Umbilical cord shows coagulation necrosis, what may be early thrombosis in one of the vessels. The tumor mass is composed of smooth muscle. Endometrium shows decidua with complete coagulation necrosis. Fallopian tube has no

cellular reaction. There are masses of neutrophils in some portions. Fallopian tube at one point shows decidual reaction on the serosa.

Diagnosis: Uterus. Accessory uterus with

history of large stillborn fetus.

Uterus. Accessory uterus with decidua and chorionic villi having complete infarction.

Fallopian tube. Aberrant decidua.

OBSERVATIONS ON CAUDAL AND INTRAVENOUS ANALGESIA IN OBSTETRICS

KENNETH N. GOULD, M. D.

Wilsonville, Alabama

"More women demand anesthesia as an escape from fear than from pain," says the good Englishman, Dr. Grantley Dick Read in his book "Childbirth Without Fear." Where fear of pain is dominant, the consequent tightening of the outlet musculature and inhibition of the natural expulsive urge, he has said in effect, are the chief factors to be dealt with in this most ancient of woman's functions. There is every reason to believe that he is right, but who among us has the infinite patience, the time, or the psychiatric skill to reeducate our human flock, were they so inclined; perhaps, in some not too distant future.

Meantime things are happening. Our patient is brought in with firm, forty five second contractions of a very full uterus, slight bloody discharge, three or four centimeters' dilatation, the cervix all but obliterated. From generations back she has been led to believe that this is a time of pain and tribulation. The most skilled of hypnotists could not now steel himself against the cry of distress. He would, I believe, call for the needle or the anesthetic mask. Spoken words are chaff. Something must be done—now.

May I submit that caudal or intravenous analgesia is the choice of our weapons against pain: intravenous barbiturate—specifically sodium vinbarbital (Delvinal)—for its almost instant effect, in emergency; and continuous caudal analgesia for the fact that it has less deleterious effect on both mother and infant than any other known anesthetic.

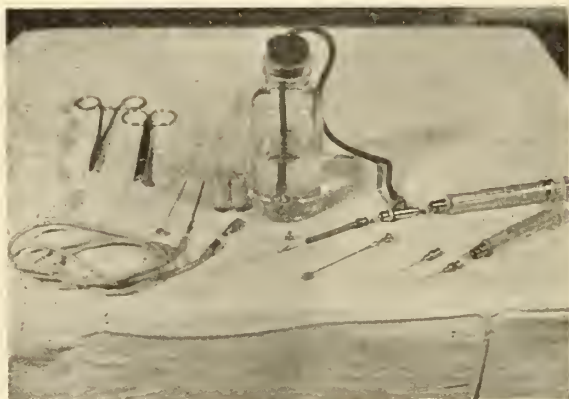
The patient, after careful coaching in the physiology of labor, is urged to go as long as she can before requesting anesthesia. With this preparation it is surprising how far some will go without complaining. She is instructed to lie on her left side with her

back to the physician, about a foot from the edge of the bed. While she is being "prepped" the doctor prepares the anesthetic solution himself, emptying 2 five cc. ampoules of 20% metycaine into a special bottle containing 115 cc. of warm saline. The valves of the apparatus should be checked and the solution drawn back and forth to make sure they are working.

Following preliminary skin whealing and injection of about 2 cc. of metycaine into the soft tissues down to the periosteum, the caudal needle is introduced at a point between or just distal to the two knuckle-like projections of bone that usually mark the opening of the caudal canal. These projections—representing the failure to close of the lateral elements of the 5th sacral vertebra—are by no means a constant finding, and the location of the hiatus must be visualized by study of both the skeleton and the living subject. Entrance is made at a 45-degree angle until the bone is encountered. It is then slightly withdrawn, about one or two millimeters, the hub depressed till the needle is in the long axis of the body, and thrust gently along the passage as far as it will go. If blood shows on negative pressure another trial must be made. If spinal fluid shows—a rather remote possibility—the procedure is abandoned.

Fortunately nature has given the pelvic organs a heavy bony protection in this area—see illustration—and there is little danger of deep penetration if even the most elemental rules are followed. However, a little visit to our friend the anatomy laboratory skeleton will do no harm.

Eight cc. of metycaine are injected. Accidental entry of a low subarachnoid will be harmless, producing a low spinal anesthesia, the effect of which will be quickly



Caudal Set

Needle holder and scissors.
Malleable caudal needles.
Valve assembly.
Metycaine and saline.

apparent. Injection into superficial fascia or periosteal tissue will produce tumefaction. The needle must be withdrawn and reinserted at a slightly deeper level. If all goes well 30 cc. more of metycaine are injected. With successful infusion of 38 cc. into the canal, there will be numbness or paresthesia of the feet. They will become pink and warm. In about 15 minutes the pain of contractions will have disappeared and there will be a relaxed and grateful patient. She is exhorted to voluntary effort as she becomes aware of change of intra-abdominal pressure.

At this point it is advisable to anchor the base of the needle, between the hub and the bead, to the skin with a black silk suture. Otherwise an occasional restless patient will work the needle out of the canal. Four feet of small guage non-collapsible tubing enable the anesthetist or attendant to inject 20 additional cubic centimeters of the solution as needed to maintain analgesia without breaking into the operative field.

In the absence of inhibitory pain, labor is usually accelerated. However, with the complete absence of the expulsive urge a thorough going episiotomy and application of low forceps, especially in primiparas, is the course of choice. With the complete relaxation induced in this form of pain block the operation becomes a pleasure instead of an ordeal.

Intravenous sodium vinbarbital is much simpler of administration. When contractions are 2 to 3 minutes apart and there is about 3 to 4 centimeters of dilatation—here too the patient is encouraged to go as long as possible without anesthesia—six cubic centimeters of the drug are injected slowly into the cubital vein. There is 1 grain in each cc. of vehicle which is of the consistency of dilute glycerol, so that an 18 or 20 guage needle should be used. Scopolamine 1/100 gr. is given hypodermically 5 minutes later. Usually this is sufficient for amnesia. In some high strung patients, however, 2 or 3 more cubic centimeters of Delvinal are necessary in 15 minutes to render them quiet and free of pain.

As an alternative, demerol (100 mg. intravenously) followed by scopolamine (1/100 gr.) intramuscularly has been used. In one case the demerol was repeated in two hours. The patient subsided but on delivery the infant required 10 minutes of oxygen resuscitation before it acquired the healthy pink and the vociferous outcry which is music to our ears. This is also occasionally to be encountered with the use of intravenous vinbarbital: a pale listless baby and an anxious period of recovery. The slowing of uterine contractions both in extent and in frequency must in a few cases be overcome by the careful use of posterior pituitary ex-



Needle and Sacrum

1. Entrance through tissue at 45° angle.
2. Depression of hub of needle.
3. Entrance into hiatus of caudal canal.



Needle in cross section of sacrum.
Notice thick posterior wall of canal.

1. Insertion to osteum.
2. Slight withdrawal and depression of hub of needle.
3. Rotation of bevel of needle and passage into canal.

tract. Four minims at 15 minute intervals to begin with approximates nature's own rate of secretion. Some individuals are highly sensitive and resume vigorous contractions. Others, usually of a plethoric nature, will require 15 minute repetitions with an increase of 2 minims at each dose before there is a response.

In order to bring forth a vigorous, well oxygenated baby we must avoid undue delay at the end of the second stage of labor and all the means at our command must be used to effect delivery within an hour of complete dilatation.

Saddle block, or low spinal anesthesia, has the advantages and disadvantages of any anesthetic via the subarachnoid route.

Psychiatry—The mental hygiene of courtship and marriage should be faced more squarely. We see evidence of a new, more healthy attitude in the marriage courses now given in some of our schools and universities. These problems are explosive if suppressed or ignored. Young people are beginning to realize that increased efficiency in living can be achieved by frankly studying and discussing the questions involved. Youth has come some distance since the hectic rebellion of the twenties when so many felt compelled to seek their salvation in promiscuous sex experience and alcohol. Youth is coming to a more balanced attitude toward sex and marriage—considering the significance of compatibility, or personality traits, of similar tastes and ideals, and of the little personal peculiarities of everyday life. This is not accomplished in mid-victorian prudishness, but in the light of earnest thought, discussion, and good teaching. As professional men, we should encourage such interest in our communities and schools. Certainly many problems that we encounter in mental hospitals could have been prevented, or greatly alleviated, by such courses. We must learn to live with ourselves and our instincts and work at the art of give and take in this fundamental basic human relationship of marriage. It is the important fountainhead of security for the whole family

Though a relatively simple procedure, it is more dangerous than caudal analgesia: first, because of the postoperative or postpartum headache in every other patient. Then, though it is part of the picture, there is a profound circulatory change. The vasodilatation and tremendous pooling of blood in the viscera can produce cerebral anemia with alarming symptoms, neutralized only by the timely use of intramuscular ephedrine. Slow injection and a minimum of barbotage offer less likelihood of marked blood pressure drop.

To summarize we may say that in continuous caudal analgesia we have come closest to the ancient ideal of medicine expressed in the words *noli nocere*.

and community. From congenial couples come children who grow up in an environment which is warm and secure, promoting satisfactory physical and mental security.

Many serious breakdowns occur in relation to parenthood. When the subject of parenthood is discussed, one is apt to forget that not all the problems of parenthood are centered on the mothers. There is also a male parent. Of course, his infancy and childhood, unlike that of most mothers, has not been spent in preparation for fatherhood. He has not spent much time with playhouses and dolls. Nor do sons and fathers get together for long heart-to-heart talks about marriage and home. The father is supposed to make a living for the family, but he has his related emotional and psychologic difficulties as well. General hospitals have begun to help him over his feeling of domestic restlessness during his wife's pregnancy and period of confinement by inviting him to classes on child care in the prenatal clinic.

We need courses in psychologic adjustment for both parents. Experience as psychiatrists in mental hospitals shows us the tragedy of a personality coming up to this level of adjustment emotionally immature and unprepared—Wall, *Pennsylvania M. J.*, March '48.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham

C. E. ABBOTT Tuscaloosa

JOHN L. BRANCH Montgomery

D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

May 1948

OFFICERS OF THE ASSOCIATION

1948-1949

Out of the fifth generation of physicians in his family line comes now Dr. J. Paul Jones of Camden to the presidency of the Association to serve in 1948-49; and he brings to the high office a heritage from his medical forebears hardly to be equaled anywhere. Of those who gave him his worthy name much could be said but it is to Dr. Paul himself that present praise must be accorded. He has long been prominent in the affairs of the Association, as one of its vice-presidents and otherwise, and he is known nationally through his membership on the Committee on Rural Medical Service of the American Medical Association. In his hands the affairs of the Association will fare well and in his endeavors to add further to its prestige he will have the warm-hearted support of its members.

Associated with him as vice-presidents will be Dr. Frank Jordan of Huntsville, Dr. J. G. Daves, Cullman, Dr. W. R. Carter, Repton, and Dr. E. L. Gipson, Enterprise. Members of the Board of Censors, chosen to succeed themselves, are Dr. French Craddock, Sr., Sylacauga, Dr. John L. Branch, Montgomery, and Dr. E. G. Givhan, Jr., Birmingham, who had been serving as an

interim appointee in the place of Dr. Lloyd Noland, resigned.

The 1948 meeting of the Association, at which these officers were elected, is now history but recollections of it will not soon fade from the memories of those who were in attendance upon it. The Mobile County Medical Society has long been known for its hospitality but it excelled itself this year, and much of the credit must be given its President, Dr. J. U. Reaves, who was untiring in his efforts to see that every courtesy was extended the members of the Association.

The next annual session is to be in Montgomery, April 19, 20, 21, 1949; and members will do well to make hotel reservations early.

SOUTHERN PEDIATRIC SEMINAR

The 28th session of the Southern Pediatric Seminar will meet in its accustomed place—Saluda, North Carolina—July 5-July 17, 1948, with Dr. Samuel F. Ravenel as Dean, Dr. Frank Howard Richardson, Vice-Dean, and Dr. Mynor W. Beach, Vice-Dean Elect. Other members of the faculty will include Drs. J. M. Arena, Lee Bivings, Amos Christy, Wilburt C. Davison, W. L. Funkhouser, Luther Holloway, George D. Johnson, Hughes Kennedy, Jr., Robert Lawson, Kenneth M. Lynch, O. L. Miller, Oren Moore, Phillip Mulherin, Angus McBryde, Ambrose McGee, Robert McKay, R. M. Pollitzer, Julian P. Price, Warren Quillian, Hines Roberts, Keitt H. Smith, D. Lesesne Smith, Jr., J. LaBruce Ward, William Weston, Jr., J. Warren White, George Wilkinson and Owen H. Wilson.

"In the summer of 1920, two outstanding and bighearted men, both physicians, both fathers—one of four, the other of five children—both specialists in child care, chanced to be returning to their summer homes in North Carolina from Louisville, Kentucky, where they had attended a medical meeting. The train was very late so they had a long time for talking.

"Dr. D. Lesesne Smith, Sr. of Spartanburg, South Carolina and Saluda, North Carolina, and Dr. Frank Howard Richardson of Brooklyn, New York and Black Mountain, North Carolina exchanged ideas and discussed problems. They became confidential and also discussed dreams and ideals, hopes and

ambitions. And right then and there, riding a late train home together, these two men decided to dedicate their own experience, energy and efforts to the cause of better babies in the South.

"The following summer, in response to letters from Dr. Smith and Dr. Richardson, there gathered in Saluda a group of men from every southern university and center of medical education in the South. These men were famed for their accomplishments in their practice in the diseases of children. They came together at their own expense and organized a teaching center, calling it the Southern Pediatric Seminar—a postgraduate summer course of two weeks in methods of diagnosis, prevention and treatment of diseases of children.

"To date, more than 1500 practicing physicians from the states of Alabama, Virginia, North and South Carolina, Georgia, Florida, Mississippi, Louisiana and Tennessee have attended the seminar," and faculty members continue to attend at their own expense, carrying on as before even though the senior Dr. Smith is deceased.

"The topics discussed are varied; as, for example, tuberculosis, child behaviour problems, practical psychology, allergy, rickets, diarrheas, convulsions, nutrition, whooping cough, pneumonia, otitis media, and even lowly impetigo and common itch. In short, if there is anything any doctor wants to know about a child—sick or well, upset, spoiled or stubborn, afflicted or injured—the chances are he can get the answer from someone in Saluda during the two weeks of the seminar."

There is no place in America more beautiful than the Land of the Sky, where Saluda is, in the very heart of the Blue Ridge Mountains. Aside from the opportunity afforded for postgraduate instruction, there is the privilege of rest and relaxation in the midst of the most inspiring mountain scenery to be found anywhere. Doubtless many Alabama physicians will want to have both pleasures at the 1948 seminar.

BCG VACCINATION

Vaccination with the Calmette-Guerin bacillus against tuberculosis and, until further controlled studies are conducted, cannot be recommended for the general population.

However, since the vaccine appears to provide some degree of protection, it is recommended for members of groups constantly exposed to tuberculosis if they have a negative reaction to the tuberculin test.

These conclusions are contained in a statement of policy adopted by the Executive Committee of the American Trudeau Society, Medical Section of the National Tuberculosis Association, and published in the March issue of the NTA Bulletin. This is the first official statement by the Society on the vaccine.

Dr. H. McLeod Riggins of New York, N. Y., chairman of the American Trudeau Society Chemotherapy Committee which prepared the report on which the statement is based, explained that BCG vaccination, developed by Calmette and Guerin from a non-virulent strain of tubercle bacilli, causes a primary tuberculosis infection. As a result of this infection, the body increases its resistance to the disease, inducing an artificial immunity of varying degree. A positive reaction to the tuberculin test, according to Dr. Riggins, indicates that a person has had a primary tuberculosis infection and his body has built up a degree of acquired immunity. Persons having a positive tuberculin test reaction probably do not benefit from vaccination with BCG, he said.

The statement emphasizes that further studies are necessary to determine the true value of BCG and points out that the vaccine cannot be regarded as a substitute for approved public health measures to protect the public from tuberculosis. Until additional information is obtained, vaccination of the general population cannot be recommended except for carefully controlled investigative programs, several of which are now under way. These programs, the statement suggests, are usually best carried out under the auspices of official agencies, such as the U. S. Public Health Service, state and municipal health departments and other especially qualified groups.

Although studies thus far made indicate that the incidence of tuberculosis may be reduced when groups likely to develop the disease because of unusual exposure to tuberculosis are vaccinated, the statement points out that the degree of protection afforded the individual is not complete and

the duration of relative immunity is not known.

BCG vaccination is recommended for the following groups if they are subjected to more than ordinary exposure to tuberculosis: doctors, medical students and nurses; hospital and laboratory personnel whose work brings them in contact with the bacillus of tuberculosis; individuals who are unavoidably exposed to tuberculosis in the home, and patients and employees of mental hospitals, prisons and other custodial institutions among whom the incidence of tuberculosis is known to be high.

Even with these groups, the statement warns against placing complete reliance on BCG for protection and points out that proper precautions should be taken to minimize or prevent "undue hazardous exposure of hospital patients and personnel and members of a household if an infectious patient is under treatment in the home."

While the vaccine, when prepared under ideal conditions and administered to tuberculin-negative persons by approved techniques, may be considered harmless, the statement does not advocate that BCG be made available for general distribution in the United States at present because: (1) the most effective strain of BCG has not been determined nor has satisfactory standardization of the vaccine been achieved, (2) the best qualified experts have not agreed as to the most effective vaccination procedure to employ, and (3) fully satisfactory arrangements have not been perfected for transportation and storage of the vaccine.

It is further recommended that the vaccine be prepared only in laboratories especially devoted to this task and where virulent tubercle bacilli are not cultivated or handled and where all possible precautions are exercised to assure safety of the product.

"Fortunately, great advances have been achieved during recent years in the development of diagnostic methods applicable on a mass scale and there have been equally great improvements in the surgical and medical treatment of tuberculosis," the statement concludes. "The expansion of modern diagnostic and therapeutic facilities is required at this time to make full use of these new methods which can accomplish further dra-

matic reduction of tuberculosis mortality and morbidity rates in the United States.

"It is to be emphasized that BCG vaccination must not be regarded as a substitute for approved hygienic measures or for public health practices designed to prevent or minimize tuberculous infection and disease. Vaccination should be regarded as only one of many procedures to be used in tuberculosis control. Vaccination seems unwarranted: (a) in areas in which the tuberculosis mortality rate is extremely low and (b) in localities in which the tuberculin test is of especial value as a differential diagnostic procedure."

BROAD EDUCATION AND TRAINING ACTIVITIES ANNOUNCED BY ARMY MEDICAL DEPARTMENT

Subjects ranging from medical equipment mechanics for enlisted personnel to basic science for medical specialists and clinicians are currently being taught at Army medical centers throughout this country and overseas, it was announced by the Army Medical Department. Civilian hospitals are generously cooperating with special facilities, courses and programs.

Primary goal of the expanding program is to provide an unequalled high standard of medical care for the U. S. Army. To reach this goal the Medical Department is offering its personnel—men and women, recruits and seasoned campaigners—increased opportunities for improvement in proficiency and for professional advancement.

The variety of training is illustrated by a list of the courses in progress at the moment. At the Army Medical Field Service School at Brooke Army Medical Center, San Antonio, for instance, there are 8-week courses for training as physical reconditioning instructor, surgical technician, medical technician, medical aid man, and medical equipment mechanic and 16-week courses in dental laboratory, medical laboratory, pharmacy and x-ray procedures for enlisted men. There are also 26-week courses in psychology and psychiatric social work for Medical Service Corps officers; a 24-week course in psychiatric nursing; a 16-week course in military neuropsychiatry; and an 8-week basic indoctrination course for nurses. Also at Brooke a 52-week course for dietetic interns will be completed in August. A 2-

week course in mess administration for dietitians was begun in March.

The advanced basic science course for medical specialists now underway at the Army Medical Department Research and Graduate School, Army Medical Center, in Washington, D. C., has attracted wide attention in both medical and educational fields since its inauguration in January. Embodying the most modern and effective techniques in postgraduate education, it provides a thorough grounding in physics, chemistry, pharmacology and the other laboratory sciences as they relate to medical diagnosis and therapy.

At the St. Louis Army Medical Depot there are two 26-week courses scheduled to start soon for officers and enlisted men. One is on medical equipment repair and maintenance sponsored by the Joint Army and Navy Medical Procurement Office, and the other on optometry. There, also, a one-year course in medical supply for officers is under way. At Brooklyn Army and Navy Medical Procurement Office a similar course in medical supply procedures is being given.

Public health training is also part of the Army Medical Department Program. At the Chicago Medical Depot an 8-week course in meat and dairy hygiene, to be given once every two months, is just starting.

GERMAN MEASLES AND CONGENITAL MALFORMATIONS

The web of proof that German measles during the first three months of pregnancy may cause congenital malformations is being woven tighter. Another strand in this web is the first quarterly report of the committee appointed by the National Society for the Prevention of Blindness and the American Academy of Pediatrics and headed by Dr. Herbert C. Miller of the University of Kansas Hospitals.

In the report of 132 mothers who had German measles during the first trimester of pregnancy there were 18 babies reported as normal. Sixty-two babies weighed less than six pounds at birth. Seventy-six babies had congenital cataracts. Thirty-five were found to be partially or completely deaf. Twenty-two babies were microcephalic and 46 were mentally retarded. Malformations of the heart were diagnosed in 67 babies,

but none were diagnosed as "blue babies." Disturbances of the eye, other than congenital cataracts, were observed in thirteen babies, including congenital glaucoma three, microphthalmus five, nystagmus two, chorioretinitis two, and strabismus two. Dental defects were found in two children, one of whom had congenital absence of some of the teeth and the other of whom had a diffuse enamel defect. Hypospadias was observed in four children and inguinal hernias in four. Malformations of the extremities, including club foot one, webbing of the fingers one, were found in three babies. Cleft palate was diagnosed in three children and harelip in one. Micrognathia was diagnosed in one child. There was one cretin, one mongolian idiot, one child with enlargement of one ear, another with enlargement of one breast, one child with a defect of the fourth rib.

Other infections than German measles were reported, but the data are too scanty except perhaps in respect to infectious mononucleosis. There have been four mothers who contracted infectious mononucleosis during the first ten weeks of pregnancy and three of the four babies had malformations of the heart. Two of the three babies died in the first two weeks and portmortem examination revealed extensive congenital malformations. One of the three babies with heart trouble had congenital cataracts. No other malformations were found. The fourth baby has remained entirely well.

In order to make this study of increasing significance, the committee needs more case material, especially cases of German measles in expectant mothers *where the diagnosis has been made by a physician*.

Doctors who have such information are requested to write to Dr. Herbert C. Miller, University of Kansas Hospitals, Kansas City, Kansas, for a questionnaire.

CORRESPONDENCE

March 10, 1948

Gentlemen:

Knowing of the high professional competency of your subscribers and the possibility of their great interest in the enclosed reprint which appeared in a recent issue of the Journal of the American Medical Association, I will appreciate your serious consideration of reprinting this short article in your Journal, preferably as near your editorial page as possible.

Thanking you for your consideration of the above request and appreciating a copy of your magazine when same appears.

Yours sincerely,
H. Earle Conwell, M. D.
1023 S. 20th Street
Birmingham 5, Alabama

*Reprinted from the Correspondence Department
of The Journal of the American Medical
Association*

October 25, 1947, Vol. 135, p. 531

Copyright, 1947, by American Medical Association

COMPLEX SIMPLE FRACTURE

To the Editor:—Realizing that the term "simple fracture" as generally defined is thoroughly inadequate to describe the trauma received in many so-called simple fractures, I have added a new definition to the simple and compound fracture nomenclature, i. e., "complex simple fracture" (Key, J. A., and Conwell, H. E.: *The Management of Fractures, Dislocations and Sprains*, ed. 4, St. Louis, C. V. Mosby Company, 1946, pp. 41-43).

A complex simple fracture is a fracture which is not compound but which has received severe trauma to either or all of the surrounding soft structures, i. e., skin, muscles, blood vessels and nerves. The bony fragments usually are displaced to a marked degree.

"Complex," as defined by "Webster's New International Dictionary," unabridged, is as follows:

(1) an assemblage of related things; (2) a whole made up of complicated or interrelated parts.

The complex simple fracture should be further described as to the type of body injury, for example: complex simple fracture (transverse, comminuted, spiral or oblique, as the case may be).

Through personal contacts and correspondence with the personnel of the three National Fracture Committees (American Medical Association, American College of Surgeons and American Academy of Orthopaedic Surgeons) with reference to their opinions and the necessity for such new fracture term or definition, there was unanimous agreement that such a definition of complex simple fracture was a necessary one and should be generally accepted and used in its broad meaning.

I make an appeal that this new fracture definition or its relative equivalent be used by the members of the medical profession. Besides expressing more adequately the pathologic process in such type fracture it will mean improved records for the hospitals and convey a better description of the fracture to the insurance companies, compensation boards and other related agencies, thereby being of much help to the patient, the physician and every one concerned.

I will appreciate any opinion or suggestions relative to the foregoing.

H. Earle Conwell, M. D. Birmingham Ala.

TRANSACTIONS OF THE ASSOCIATION

1948 SESSION

PART I

TRANSACTIONS OF THE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA HELD AT MOBILE, APRIL 15, 16, 17, 1948.

First Day, Thursday, April 15

The Medical Association of the State of Alabama convened in annual session in the ballroom of the Admiral Semmes Hotel, Mobile, and was called to order at 9:00 A. M. by the President, Dr. J. P. Chapman of Selma.

Invocation was offered by Dr. Howard Reaves, Pastor of the First Baptist Church of Mobile.

Addresses of welcome were delivered by Dr. J. U. Reaves, President of the Mobile County Medical Society, and Mr. E. Roy Albright, President of the Alabama Pharmaceutical Association, Mobile.

Reports of committees were called for by President Chapman and they were presented as follows, being referred to the State Board of Censors after they had been read.

REPORTS OF COMMITTEES

Prevention of Blindness and Deafness

It seemed to me that the most practical action for the Committee was to try to establish somewhere in Alabama in a public school system a sight-saving class that would benefit school children of low vision within a certain compass and that would serve as an example to other areas. I preferred to start with my home town of Gadsden. (Perhaps one should not begin with one's home town but among strangers.) The sight-saving class idea is not new; it originated in Europe. I informed my confreres of the Committee about my activities. (Irrelevantly, I will send a bale of data to my successor, express prepaid.)

The school children that fit best into this type of school room are those that see no better than 20/70 of normal with the better eye, or with both eyes, with the best corrective ophthalmic lenses, if they are needed, that can be obtained. Pupils with vision much lower than 20/200 are not suit-

able subjects for this special educational method. Children who wear as strong a lens as a minus 6.00 diopter sphere and see no better than 20/30 with the better eye, and those with progressive diseases of the eye, internal or external, accompanied by even a moderate impairment of vision, should be enrolled.

The screening process is in its rudiments simple enough. The regular school teacher is usually able to point out children with low vision. In most schools, the teacher, at least once a year, puts the eye chart in one corner of the school room and the pupil in the other and with this Snellen test card takes the vision of each eye separately. An experienced teacher is usually not at a loss to note signs of eyestrain which I have not space to enumerate here. The records of all refractionists should reveal the names, addresses, and degree of vision of all children. Probably one school child in a hundred should be put in a sight-saving class. The special educational training should begin with the first grade whenever children with low vision can be ferreted out in this age group; and it is desirable to have this special instruction extend through high school. The younger children in the lower grades, in particular, stand in need of this sight-saving training because, if eye corrections of whatever sort are to be undertaken, they must be started early in childhood to prove effective and to prevent a visual and mental regression.

In these days of all sorts of health and accident insurance, of full-time employment with high wages, of numerous and geographically well distributed oculists, of many easily accessible hospitals, of sulfa drug and penicillin therapy, of protective goggles in industry, and of manifold protective measures against eye injuries, it would seem that sight-saving class work in the school systems of the most populous centers in Alabama would most repay the time and relatively low expense entailed.

Such a class does not mean a new school system or a new building. One consists essentially of a teacher with an A. B. or a B. S. degree who should have had a special course in this work. The Florida State University at Tallahassee offers a five-weeks' course for an overall expense of about one hundred dollars, this fee defraying the costs of board, lodging and tuition. There is a nine-month's course in this University for those wishing to pursue it.

Omitting refinements and unessential adjuncts, the necessary facilities for a sight-saving class are fifty foot-candles of light, without glare. (Even a school room for normal-eyed children should have thirty foot-candles to prevent eyestrain.) And green chalk boards with especially large crayons, either yellow or white; dull mat paper; text-books (which will be bought in almost all instances by the parents though at a higher price than those of ordinary type). These books are printed in 24-point type, in letters about one-third of an inch high. A typewriter with letters, figures and symbols of 18- to 24-point type for the making of bulletins and classroom exercises is a necessity. A small but important item is pencils with an extra large and

extra black lead. Special maps and charts printed with contrasting colors and with large type are important. Most important of all needs is a trained teacher with the attribute of interest in this work and with patience and zeal. Specially adapted manual training and the arts are provided.

The purpose of sight-saving class work is to provide individual attention to and instruction of crippled-eyed children in a study room, equipped as described above. These children are not otherwise segregated. They play with their normal-eyed fellows and recite with them in the class rooms and grades to which they belong. One teacher can give this individual attention to as many as sixteen children and this number may be distributed from the first to the eighth grades. If two teachers are provided for more than sixteen children, one teacher may take charge of the first four grades, and the other of the fifth to the eighth, inclusive. Children with vision considerably poorer than 20/200 should attend the excellent Alabama Institute for the Blind at Talladega.

Thirty-two states of the American Union have already established these special classes, but because of a lack of initiative or genuine sympathy, or because of a disinclination to break with traditional and outmoded methods, or because a child with crippled eyes does not arrest the attention of the public or arouse its commiseration, the educational forces of sixteen states are bringing up the rear and fighting a rear-guard action. It is a matter of apathy. Yet it is not a prohibitive matter or an expensive undertaking to establish and maintain these classes.

It is pleasing intelligence that Dr. H. G. Dowling, the forward-looking president of the Alabama Institute for the Blind and Deaf, at Talladega, is establishing some special classes in sight-saving for the afflicted children who see too poorly to attend the usual school for normal-eyed children but see too well to attend the regular classes for the blind at Talladega. It would seem that there will always be a need for these sight-saving classes at Talladega; and it is greatly to be hoped that the Legislature will make liberal provision for more of these classes there. But providing sight-saving classes is primarily a local problem, and the education of the children concerned should be carried out in the larger cities and towns throughout the state, though it is manifestly impractical for every school to provide such a class. Some students may have to commute back and forth from their homes in rural sections to the nearest town for such a class, or find themselves boarding-places in the various centers. As a beginning, two to six classes should be established in the larger cities of Alabama, according to the population, in direct proportion, such as Birmingham, Mobile, Montgomery, Gadsden, Anniston, Huntsville, Florence, Dothan and so on.

Low visioned children of this category are being trained now in thirty-two progressive states to make the best use of their eyesight, and are receiving the mental training and the manual training that we ordinarily call education. Some

of the methods used are psychological. They are being taught to become self-reliant and self-supporting instead of becoming public charges. The humanitarian appeal of happiness versus misery, though it may have no footing in scientific textbooks, still influences us. Thirty-two of the most progressive states in the Union find this a practical matter and a crying necessity, not an idle theory. Refractionists everywhere have a responsibility to overcome the complacency and astonishing indifference of education boards.

After a voluminous and protracted correspondence with many persons interested in this cause, many of them authorities in this field, I assembled a large mass of data in the form of letters, pamphlets, and an authoritative text-book by Mrs. Winifred Hathaway of New York City. Many of these have been distributed among three or four city or county officials here. We were fortunate to induce to meet with us and expound this subject, on December 1, 1947, here in the Recreation Center, Mr. James P. Todd, Director of Medical and Social Services of the Florida Council for the Blind, with headquarters at Tampa, and Miss Louise Pickle, faculty member of the Florida State University, at Tallahassee. These specialists convinced us that in establishing a sight-saving class there was nothing to fear but a little initiative—and a little effort—slightly away from the age-long groves. Presiding at the meeting was the Hon. J. H. Meighan, Mayor of Gadsden, and other city and county officials and civic-minded citizens. Mr. Monroe of the Institute aforesaid at Talladega was present and participated in the conference. Dr. Dowling was unavoidably prevented by illness from attending. I stand ready at any time to have present at a future meeting other experts in sight-saving methods. Mayor Meighan showed an appreciation of the needs of this problem and a sympathy for it, and expressed a desire to inaugurate at least one class in the public schools of Gadsden in the autumn of 1948. Mr. Todd and Miss Pickle generously came to Gadsden without charge for their services beyond a small per diem for traveling expenses.

Mayor Meighan and the city of Gadsden are to be congratulated on His Honor's perception of the need of this special type of education; and if the Mayor can secure the cooperation of his school board, I believe that Gadsden can have the honor of being the first municipality in Alabama to provide educational facilities for the near-blind child. I am hopeful of results; the Mayor is constructive and rarely fails, if he ever does, in securing for the citizenry what he thinks they need; and what he determines to secure.

I recommend publicity in the Journal of the Medical Association of the State of Alabama in the form of editorials or expositions to keep this subject before the medical profession. I think that the experts of the State Department of Education should prepare a bill for legislation to provide appropriations (magic word!) to initiate and maintain sight-saving classes in the more populous centers of Alabama or to share with the cities some of the expense, and to increase the

sight-saving facilities of the Institute for the Blind and Deaf at Talladega.

By J. Lucien Brown
Chairman

W. B. Hardy
Karl Beckwith
Committeemen

Mental Hygiene

During the past year a number of activities and happenings have served to bring the problems of mental health to greater public attention.

The National Mental Health Act passed by Congress became a fact and Federal money was made available to all states that were able to provide the facilities and personnel necessary to procure it. The money must be matched by State funds and is spent with the approval and under the direction of the State Health Officer.

Members of this Committee, together with Dr. D. G. Gill and Dr. George Denison, met with Dr. Robert Felix of the U. S. Public Health Service, that allocates these funds, and tried to work out a plan for developing a mental health program along these lines in Alabama. We did not have, nor were we able to obtain at the time, the trained personnel necessary for the initiation of this project. Negotiations are now in progress with a qualified and experienced psychiatrist who may serve as a starter in this direction. It is expected that some Federal money will be available under this Act for the coming year and we hope that Alabama will be in a position to claim a part of it.

A great deal of interest in improving Alabama's psychiatric facilities has been shown by lay groups such as the Junior Chamber of Commerce and the Alabama Mental Health Association. Members of this Committee have spent considerable time and effort in an advisory capacity with these organizations. The Alabama Mental Health Association has increased its membership and the scope of its activities and is doing a creditable job along lines of educating the public to mental health needs and possibilities.

Members of this Committee have, throughout the year, given talks by invitation to many civic and lay clubs on various aspects of mental hygiene. We have also been fortunate in getting some radio time for this purpose. We contribute a column on the practical aspects of mental health to the monthly bulletin "Manpower" published by the Birmingham Industrial Health Council. We also participated in a workshop sponsored by this same organization. We were also participants in the program of the annual meeting of the Southeastern Safety Conference held in Birmingham this March. A fifteen-bed psychiatric section for private patients in the Jefferson Hospital at the Medical Center in Birmingham affords not only treatment opportunities for private psychiatric patients in a general hospital but serves also as a teaching unit for internes and residents of the Medical College of Alabama.

All in all, Alabama is making some progress along psychiatric lines though much too slowly. Our position is yet that of one of the less progressive states. Your Committee continues to occupy itself with these problems and realizes its limitations. We ask for your continued support.

E. S. Sledge
J. S. Tarwater
Frank A. Kay
Chairman

Accidents and Industrial Hygiene

We have noted in the past year that Workmen's Compensation Acts have been greatly amended in many respects in at least twenty-five states of the Union.

First, several of the states have included occupational diseases among conditions covered by the Workman's Compensation Law. Second, a number of legislatures have increased compensation benefits, either by increasing the death and disability benefits or by providing payment for compensation during the entire period of disability instead of limiting it to a fixed number of weeks. Third, the daily allowance for hospital care and ceilings on medical service and maximum medical and hospital benefits have been raised in many states—in several states as high as \$1,500.00. As of the present time there have been no amendments to the Workmen's Compensation Law in Alabama, and while the cost of medical care and hospitalization has greatly increased, the benefits provided by compensation laws here have not been increased. Hence, the Committee on Accidents and Industrial Hygiene feels that the State Medical Association should urge the State Legislature to amend the Workmen's Compensation Law to provide additional medical benefits over and above the \$200.00 now allowed.

The Committee has also noted the great deal of emphasis, nationally and locally, in regard to industrial health and accident education. We have noted the establishment of the Birmingham Industrial Health Council to foster industrial health education under the sponsorship of the Birmingham Chamber of Commerce and the Jefferson County Health Department. We would like to recommend to the State Medical Association that this type of work by local organizations be affiliated with the State Committee on Accidents and Industrial Hygiene so that the public will receive medical information from doctors and not from organizations of laymen.

H. Earle Conwell
Marcus Skinner
Benjamin Meyer
Chairman

Maternal and Infant Welfare

During the past year this Committee has undertaken two major projects: (1) to supply suitable pediatric and obstetric speakers for those County Medical Societies requesting them, and (2) to attempt a preliminary investigation into causes of present day maternal mortality and stillbirths in Alabama.

Speakers from the memberships of the Alabama Association of Obstetricians and Gynecologists and from the Alabama Pediatric Society were furnished 15 of our county medical programs. Interest in these two branches of practice was thus encouraged.

For the purpose of evaluation of maternal deaths and stillbirths, three years (1944-46) were included so as to minimize statistical errors in smaller counties. The maps and graphs now on display in the Scientific Exhibits record our findings. Our studies show that although maternal mortality and stillbirth rates in Alabama have been gradually declining for the past decade, these same improved state rates compare most unfavorably with national rates. Our state is not unlike many other Southern States in respect to a large Negro population and a low per capita wealth. Fewer physicians will be found in such areas for obvious economic reasons. Study of our graphs demonstrates most clearly the importance of the Negro problem in Alabama. Negro midwives, seemingly necessary in certain portions of our state, do not constitute a suitable substitute for physician attendance at delivery.

Our studies further reveal that 11 Alabama counties contribute 25% of maternal deaths but only 12% of total births. Figures for these counties follow:

ALABAMA COUNTIES WITH HIGH MATERNAL MORTALITY 1944-46

(Maternal Mortality and Stillbirth Rates Per 1000 Live Births)

	Maternal	Stillbirth	Negro Deaths	Negro Births
1. Lowndes	8.2	52.5	13 of 14	90%
2. Chambers	6.8	28.3	11 of 18	47%
3. Barbour	6.7	29.4	12 of 17	64%
4. Perry	6.7	41.7	12 of 12	74%
5. Escambia	6.6	30.0	4 of 17	40%
6. Elmore	6.1	36.1	8 of 14	49%
7. Marengo	5.9	37.2	11 of 14	80%
8. Montgomery	5.9	31.4	42 of 50	50%
9. Winston	5.5	15.2	0 of 8	0%
10. Crenshaw	5.4	31.1	7 of 8	40%
11. Macon	5.4	38.7	12 of 12	86%

State rates for same period: Maternal.....3.2
Stillbirth.....29.2

PHYSICIAN ATTENDANCE AT DELIVERY 1944-46

1. Lowndes	10%	
2. Chambers	72%	
3. Barbour	50%	
4. Perry	23%	
5. Escambia	67%	
6. Elmore	61%	Alabama: 75.4%
7. Marengo	26%	
8. Montgomery	58%	
9. Crenshaw	70%	
10. Winston	92%	
11. Macon	39%	

It would appear that any efforts to lower our state rates could well give special consideration to problems of the above 11 counties.

Lowndes County has by far the worst record of maternal deaths. Ninety per cent (90%) of all births in this county are Negro and 90% are

unattended by a physician. This county has neither an organized prenatal clinic nor even an unapproved hospital. (By unapproved hospital we mean one not yet approved by the American College of Surgeons.) These facts in Lowndes are evident and speak for themselves.

Chambers County, with a prenatal clinic and an unapproved hospital, does not have a Negro problem any different from most other Alabama counties. Better obstetrics could lower this too high rate.

Barbour County is in the same category as Chambers although the Negro problem is more pronounced.

Perry County, like Lowndes, is a Negro problem county. This county has a prenatal clinic but no hospital. Only 23% of births were physician attended and all maternal deaths were Negroes.

Escambia County does not have a major Negro problem as evidenced by the fact that only 40% of births were Negro and only 4 of 17 maternal deaths were Negro. This county has an unapproved hospital but no prenatal clinic.

Elmore County has an unapproved hospital and a prenatal clinic. About one half of all deliveries were Negro but 61% were physician attended.

Marengo is clearly a Negro problem county. Eighty per cent (80%) of all births were Negro but only 26% of all births were physician attended. This county has a prenatal clinic but no hospital of any kind.

Montgomery County presents a clearcut Negro problem as evidenced by the findings that while only 50% of births were Negro, 80% of maternal deaths were Negro. This Committee feels that hospital facilities for Negro patients in this county are woefully inadequate. Without doubt, this is a major factor in the maternal mortality rate of this county.

Winston County is a paradox in that the Negro problem here is nonexistent. There is an unapproved hospital but no prenatal clinic. Better obstetrics would help here because physician attendance was 92%.

Crenshaw County had 40% Negro births but 90% of maternal deaths were Negro. This county has neither prenatal clinic nor hospital.

Macon County is a Negro county and the home of Tuskegee Institute. Eighty six per cent (86%) of all births were Negro, all maternal deaths were Negro, and 39% of births were attended. There is a prenatal clinic, an approved hospital, and until recently an approved school of midwifery. Although this latter school did serve a valuable purpose, this Committee feels that midwives are not a suitable substitute for physicians.

This Committee realizes full well that no one committee nor one agency alone can produce an overnight solution for our Alabama problem of a too high maternal mortality rate. Together with our maps and graphs, we pass the following suggestions along to our State Health Department for its consideration:

1. Authorization of a salary schedule that will offer some inducement, by present day standards,

for competent young physicians to assist our State Bureau of Maternal and Child Health.

2. Lowndes County should surely have an organized prenatal clinic and some sort of comprehensive program for maternity care. Each of the other 11 "problem counties" should also have such a prenatal clinic.

3. Montgomery County should have some adequate plan for hospitalization of Negro maternity patients in need of such service. Prenatal clinics, many discontinued during the War, should be reactivated.

4. Negro midwives, although perhaps better than no attendant at all, will never adequately replace physician attendance at delivery.

5. Any Alabama county with an A. C. S. approved hospital should surely be able and willing to operate an organized prenatal clinic for indigent patients. Such counties are Madison, Morgan, Etowah, Walker, Fayette and Talladega.

6. Our northern counties, although not the chief contributors to our high state rate, are rather poorly represented in the way of organized prenatal clinics.

7. This Committee is ready to assist our State Health Department in any effort aimed at solution of the problems above stated.

This year marks the end of the E. M. I. C. program. Even those of us who supported this program, for patriotic or other reasons, are indeed glad to see the end of it. Many of our Alabama physicians did not cooperate with it but many Alabama men in the armed forces did not cheer over their jobs either. When the specter of state medicine is really raised, the E. M. I. C. program will probably be presented in favor of such a program. This Committee knows that it speaks for a major portion of our Alabama physicians when it reminds any over-zealous proponents of state medicine that physician participation in an emergency wartime program does not mean participation in such a peacetime idea sponsored by the Federal government. This Committee also wishes to pay tribute to an outstanding Alabama physician who administered this E. M. I. C. program in our state. Dr. J. S. Hough has concluded an exceedingly difficult assignment in an exceedingly efficient manner.

This committee earnestly suggests that the County Medical Societies of Lowndes, Chambers, Barbour, Perry, Escambia, Elmore, Marengo, Montgomery, Winston, Crenshaw and Macon each appoint from their respective memberships a county committee for study and evaluation of each maternal death in that county. Two of these counties will require assistance from the State Bureau of Maternal and Child Health to accomplish the above purpose, Lowndes with a very small membership and Macon where local Negro physicians should probably be consulted. Such a committee has long functioned in Jefferson with tangible results. The State Bureau of Maternal and Child Health and the State Committee on Maternal and Infant Welfare offer their assistance to any county that wishes to appoint and sponsor such a committee. If possible, local problems should have local solution.

Vital statistics are of little value unless uniform standards are followed. At the specific request of our State Bureau of Vital Statistics, we suggest official standards for the term "premature infant."

In this entire Nation, only a very few southern states have a maternal mortality rate higher than Alabama. Our rate should and can be reduced. The help of our State Medical Association, our State Health Department, our County Medical Societies, and that of every physician in Alabama who delivers babies will be necessary and is expected.

Insofar as specific recommendations to the President and the Board of Censors of the Association are concerned, we have only three:

(1) We recommend a careful evaluation of our full report and our suggestions by our State Health Department.

(2) We further recommend that our State Health Department be encouraged to offer such salary to attract capable young physicians to full-time positions in our State Bureau of Maternal and Child Health. One man cannot adequately attack this problem.

(3) We further recommend that the State Medical Association officially notify the Bureau of Vital Statistics, Alabama State Health Department, that the term "premature infant" be now used to refer to any newborn less than full term but more than 28 weeks' gestation, birth weight less than 5 pounds and birth measurement in length be less than 17 inches. Space for above data may be provided on birth certificates but need not be an official part of same.

T. M. Boulware
Chairman
Hughes Kennedy
A. E. Thomas

Physician-Druggist Relationships

The activities of this Committee during the past year have been chiefly directed toward developing acquaintance and friendly relations with members of the druggist group.

The annual physician-druggist barbecue at Roebuck Springs (Birmingham) was well attended and was an unqualified success. This was the second outing the two groups have had together.

We wish to acknowledge courtesies extended by the State Pharmaceutical Association and the Birmingham Retail Druggists Association in that your Committee chairman and officials of the Jefferson County Medical Society were guests at the annual banquets of these organizations.

R. E. Cloud
Chairman
R. R. Kracke
W. M. Salter

Anesthesiology

The giving of this report marks the first year of existence of this Committee. We realize that in any new undertaking such as this visible progress to the membership at large will be slow, as the first years of an undertaking are usually

the hardest. However, we do feel that the purposes for which this Committee was established, i. e., "to stimulate and promote a wider application of modern anesthesiology in Alabama," have proceeded along with activities directed toward that goal. Our limited accomplishments have given us renewed and constant encouragement to continue in our efforts of having better anesthesia available for the people of Alabama. Now that the recent World War has given much recognition to anesthesiology, that both the medical profession and lay groups are extolling its virtues, as evidenced by both the many articles in lay magazines and papers and medical journals, we have received inspiration and moral support in our efforts.

There are now two approved hospitals for the training of physicians in anesthesiology. These facilities are not only for those men who will do anesthesiology as a full-time profession but also for those physicians who would pursue it on a part-time basis and thereby offer their community a service that has been missing. Your Committee has taken many opportunities to disseminate this information.

We have been glad of the number of opportunities we have had to present papers on this subject to County Medical Societies and at hospital staff meetings.

Twice during the past year we have had men of international renown in the state to address different groups: (1) Dr. Edward B. Tuohy, Director of Anesthesiology at Georgetown Medical Center, Washington, D. C., and President of the American Society of Anesthesiologists, was a visitor in September; (2) Dr. John Adriani, Director of Anesthesiology at Charity Hospital, New Orleans, Louisiana, was a visitor in February.

Also, during the year the Alabama Society of Anesthesiologists was formed. This is a component society of the American Society of Anesthesiologists and will have representation in its House of Delegates.

Although the physician anesthesiologists in Alabama are few in number at the present time, there are good signs that the supply will increase. It is our feeling that the number will be greatly increased when the professional and economic status between anesthesiologists and hospital patients becomes identical with that now existing between hospital patients and other members of the medical and surgical staffs.

E. B. Robinson, Jr.
Chairman
Sid W. Collier
Alice McNeal

Contract Practice

After a careful study of the present Constitution and By-Laws of the State Association relative to the type of contracts that may be entered into by physicians of the state, we as a Committee have arrived at the following conclusions:

1. The By-Laws as written are complete and adequate to cover any situation now existing.

2. If any contingency arises in the future that is not specifically covered by the By-Laws that

the opinion of the State Board of Censors be requested concerning the interpretation of said By-Laws before suggesting any changes.

Ivan C. Berrey
Chairman
W. H. Blake, Jr.
K. E. Luckie
H. H. Henderson, Jr.
D. O. Wright

Counsellor Distribution

This Committee was appointed "to study the number and equitable distribution of Counsellors most suitable for changing conditions in our Association."

If "changing conditions" should refer to increase in membership, this can be disregarded. In 1927 the Association had 1668 members; in 1947 only 1645, a loss in twenty years of 23. District No. 1 has had a gain of 26; District No. 9 (Jefferson) a gain of 90. District No. 3 has lost 43; District No. 4, 32; District No. 7, 37; while others have lost from 5 to 9 members.

There are 100 Active Counsellors which, at present, is one for each 16.4 members of the Association. Life Counsellors numbered 46 in 1927 and 57 in 1947. Life Counsellors are about as regular in exercising their vote as Active Counsellors. At the 1927 annual meeting 85% of Active and 78% of Life Counsellors were in attendance. In 1947, 76% of Active and 60% of Life Counsellors were present.

TABLE I
DISTRIBUTION OF COUNSELLORS, 1947, BY
SIZE OF SOCIETY

County Society Membership	Number Counties	Total Membership	Number Active Counsellors	Number Total Counsellors	Votes Per 100 Society Members By	
					Active Counsellors	Total Counsellors
0-15	45	413	35	51	8.5	12.3
16-25	11	213	17	24	8.0	11.3
26-50	6	188	12	15	6.4	8.0
51-150	4	364	17	31	4.7	8.5
Over 150	1	467	19	36	4.1	7.7
Total	67	1645	100	157	6.1	9.5

Distribution of voting strength is not entirely equitable; the smaller county societies have somewhat greater representation. This is illustrated in Table I, which shows Active Counsellors and Total Counsellors per 100 society members. Distribution in 1947 is essentially the same as for 1927.

These facts are not in themselves adequate or conclusive, for representation and voting strength is distributed among the Congressional Districts and many Districts include both urban and rural counties.

Table II shows distribution of Counsellors by Congressional Districts and it is upon these findings for 1947 that the Committee wishes to base its report.

TABLE II
DISTRIBUTION OF COUNSELLORS, 1947, BY
CONGRESSIONAL DISTRICTS

District No.	No. of Counties	No. of Members	Number of Counsellors		Votes Per 100 Society Members By		Change in Membership Since 1927
			Active	Total	Active Counsellors	Total Counsellors	
1	7	195	10	17	5.1	8.7	+26
2	9	209	14	19	6.7	9.1	-5
3	10	119	10	13	8.4	10.9	-43
4	8	139	9	12	6.5	8.6	-32
5	8	142	8	11	5.6	7.7	-7
6	8	123	10	17	8.1	13.8	-8
7	9	119	11	18	9.2	15.1	-35
8	7	132	9	14	6.8	10.6	-9
9	1	467	19	36	4.1	7.7	+90
Total	67	1645	100	157	6.1	9.5	-23

The Committee recommends that no change be made in the College of Counsellors and believes that the distribution of Counsellors by Congressional Districts, varying as it does from 4.1 to 9.2 Active Counsellors per 100 society members, is not a serious inequity and, perhaps, represents the mathematical and other difficulties involved in distributing 100 Counsellors among nine Districts. Furthermore, Article VI, Section 10, of the Constitution which provides for equitable distribution of Counsellors is sufficiently broad to permit reapportionment among the Districts should such action be indicated. This Article states: "The nominees must be so distributed among the Congressional Districts of the state as to make the Counsellors in the several Districts bear approximately a uniform proportion to the aggregate number of members of County Medical Societies in the respective Districts, due and proper regard being had to the qualifications for the position of a Counsellor, prescribed in the preceding section."

Our opinion is influenced by that of Dr. Jerome Cochran as quoted by Dr. W. H. Sanders in his "History, Philosophy and Fruits of Medical Organization in Alabama," given before this Association in 1914 and on its Forty-First Anniversary.

To quote Dr. Cochran: "Under no circumstances and for no possible reasons, no matter how plausible they may seem, should the number of Counsellors (100) ever be increased."

Dr. Cochran and Dr. Sanders argued that the position of Counsellor is honorable and selective and that it should remain so. Furthermore, they argued that it was never intended that Counsellors should exercise numerical control over the Association but that "real control be vested in the Delegates as representatives of, and spokesmen for, the profession." This, however, is not the case at present for the 157 Active and Life Counsellors outnumber the 143 Delegates, and contrary to the ideas and purposes of the founders of this Association, the College of Counsellors exerts numerical control of voting strength.

An increase in the number of Counsellors would increase this disparity; a decrease would not seem desirable or proper. It appears that the number of Delegates should be materially increased, and the Committee further recommends a study and report to the Association on the number and equitable distribution of Delegates. When it is recognized that, on the basis of Delegate votes per 100 members, one District (No. 3) has eleven times the representation of another (No. 9), it would seem that such a study is long overdue.

George A. Denison
Chairman

J. M. Weldon
C. S. Cotlin, Jr.

Postgraduate Study

Following recommendations of the Committee in its 1946-47 report, the Board of Censors appropriated the sum of \$1,000.00 annually for a period of three years for an annual program of postgraduate instruction to be given at Mobile under the direction of the Medical College of Alabama and sponsored by the Association through its Committee.

The first seminar at Mobile was held September 24, 25, 26, 1947. Day sessions were held in the auditorium of the Nurses' Home, City Hospital; night sessions in the ballroom of the Admiral Semmes Hotel. Instruction was given by twenty-five faculty members of the Medical College, Drs. J. M. Weldon, Mobile, William J. Darby of Vanderbilt University, and Daniel C. Elkin, Emory University. The seminar consisted of a total of 22 lectures and 4 round table conferences. Sessions were held from 9:00 A. M. to 8:00 P. M. with time out only for meals. Approximately 75 physicians attended each session.

On the first day, visiting faculty members of the Medical College were hosts at a smoker, and on the second day, a dinner was given by the Mobile County Medical Society for all physicians in attendance.

The courses of instruction and round table discussions were enthusiastically received. Expressions of satisfaction with the seminar from physicians in the Mobile area and of appreciation of visiting instructors for the gracious reception and cooperation on the part of the Mobile County Medical Society speak for the success of the undertaking, and, in the opinion of the Committee, justify a continuance of the program for the period of the appropriation.

The Committee desires to express thanks to the Board of Censors for appropriating funds, the Dean and participating faculty of the Medical College, visiting instructors, and the Mobile County Medical Society for wholehearted cooperation in making the entire program most successful.

The Committee desires to submit the following recommendations:

(1) That a seminar under the same joint plan of instruction and sponsorship as that of 1947 be given in Mobile in the fall of 1948.

(2) Inasmuch as the Medical College of Alabama underwrote the expenditures for the 1947

program at Mobile, which was subsequently refunded by the Association, that as a matter of convenience the annual appropriation of \$1,000.00 made for this instruction be turned over to the Medical College of Alabama on or before the first day of September 1948 and 1949, through its business office with the stipulation that an itemized and duly certified statement of expenditures for all forms of postgraduate instruction under joint sponsorship of the Medical College of Alabama and the Committee on Postgraduate Study be rendered to the Association's Secretary-Treasurer together with any unused balance on or before March 15 of each fiscal year.

(3) The Committee respectively calls attention to a letter, copy attached, from the Chairman of the Seminar Committee of the Medical College of Alabama which states: "Requests have been received by the Medical College from County Medical Societies for the college staff to present monthly programs before their organization for the entire year." This program was put into effect at Russellville, January 7, 1948, thereby serving the societies in Franklin, Lauderdale, Colbert, Lawrence, Winston and Marion Counties. "Inasmuch as component units of the State Association are being served, any residual of the \$1,000.00 for such activities could be utilized in paying expenses of the speakers. I hope you will take this up with the state authorities and urge them to let us have the money left from the Mobile seminar for the purpose outlined above."

Whereas a program of this nature may well constitute a part of the joint activities of the Medical College and the Postgraduate Committee, and since their instruction on this particular program is given by 19 part-time and 4 full-time faculty members, all of whom have paid their own expenses, the Committee further recommends that, after expenses of each Mobile seminar have been met, the Board of Censors authorize the use of any unused balance of the yearly appropriation by the Medical College of Alabama in meeting expenses incurred in instruction of county societies.

It is further recommended that the balance, approximately \$167.51, remaining from the 1947 appropriation be made available to the Medical College for reimbursing instructors who have already paid their own expenses and to meet further personal expenses of those to follow. Expenses of this nature will approximate \$10.00 per trip since two instructors from the Medical College supply each monthly program, the trip being made by automobile belonging to one of the instructors.

By making this small balance available each year for this type of instruction, the Committee foresees, through the continued cooperation of the Medical College and the Association, the gradual expansion of its program whereby a high type of graduate study will be made available to other counties in strategic areas within the state.

Ralph McBurney
Chairman

Grady Segrest
Cabot Lull

Cancer Control

There was an increase in the number of cancer deaths reported in Alabama in 1947 (2327) as compared with 1946 (2245). This represents an increase of 82 over last year. Our efforts in combating this disease must continue, without let-up. It is not believed that there will be an appreciable drop until more early cases are detected and treated and more precancerous lesions are cured. Early detection and early treatment are still the surest methods of lowering the death rate.

In the United States, as a whole, one death in eight (1:8) is attributed to cancer. In Alabama, one death in eleven (1:11) is reported as due to cancer. It is generally believed that the former ratio is more nearly correct. This would suggest that some cancer deaths go unrecognized. Not all deaths are reported by physicians. It is entirely possible that some cancer deaths are not recognized as such. The Department of Health is keeping a close eye on the state cases that are treated in the Cancer Clinics.

An increasing number of indigents have been treated at the Cancer Clinics. In 1947, 1447 cases were treated by them. This represents an increase of 366 over the preceding year. During their entire time of operation, 3769 patients have been referred to these clinics for diagnosis and treatment. Of this number, 630 were found to be non-malignant. This represents alertness on the part of the referring physician. One of our greatest aids in the reduction of deaths from cancer is the curing of these lesions which predispose to malignant degeneration. It is hoped that more of such cases can be discovered. Only two of the Cancer Clinics have been approved by the American College of Surgeons. It is hoped that all of them will meet the minimum requirements of the College and become an approved clinic.

There is still a great need for a Director of Cancer Control in the State Department of Health. The Department has done a remarkable job in this work but the time at hand is too inadequate to permit the execution of many details encountered.

Letters have been received from lay groups regarding "detection centers." These must necessarily be of local origin. The Committee feels that the organization of such groups is a function of the County Medical Society. The Committee believes that the organization of such centers in strategic areas would be of inestimable value in detecting early malignant lesions and potentially malignant lesions. Such centers have frequently discovered unsuspected lesions.

The Committee wishes to take this opportunity to pay tribute to the Alabama Division of the American Cancer Society. Under the able leadership of Mrs. Ray Meade, the State Commander, this organization has done a phenomenal job in lay education concerning cancer. It is due to its untiring efforts that more and more early cases of cancer seek medical advice. Not only has it convinced women of the value of periodic physical examination but also many men. Each year more and more men have volunteered their serv-

ices in helping the Field Army. The profession, as a whole, is indebted to this organization.

The Committee recommends:

1. Courses in cancer diagnosis to be included in the extension courses to be offered to the physicians of the state by the University. These should include the basic methods of detecting cancers in various parts of the body and the earliest symptoms and signs that should make one suspicious.

2. An annual seminar on cancer and allied diseases. This should embody more advanced work in research, diagnosis and treatment. This should also be under the auspices of the University. The lecturers, or essayists, should be recognized authorities in their specialties.

3. A speaker's bureau should be formed. It should publish and furnish to each County Medical Society a list of physicians who are capable and willing to speak upon their specialty when called upon.

4. The State Department of Health furnish each physician each year with a well written, concise journal which gives the latest information on the diagnosis and treatment of cancer and the latest information concerning cancer research. (Such a journal is now in the hands of the printers and will soon be ready for distribution.)

5. All State Cancer Clinics meet the minimum requirements of the American College of Surgeons, with a view to recognition by the College.

6. The formation of detection centers at strategic sites.

7. A Director of Cancer Control be added to the personnel of the State Department of Health. Many of the features of cancer control are best handled by the Department of Health. A person especially trained in this work would be of inestimable value in correlating the activities of various organizations interested in cancer control, in supervising the activities of the clinics and such other matters as may come up from time to time.

RESOLUTION

WHEREAS, Henry P. Johnston, Executive Vice-President, The Birmingham News Company and Managing Director of Radio Station WSGN, has contributed his services as State Campaign Chairman for 1948 to the American Cancer Society, Alabama Division; and

WHEREAS, Henry P. Johnston has with his Committee and in cooperation with Mrs. Ray Meade, State Commander and Executive Director, set up Campaign Chairmen in each county; and

WHEREAS, Henry P. Johnston has through his radio and press connections made available the giving out of cancer information through these media; and

WHEREAS, an increasing interest in Cancer Control has resulted, therefore be it

RESOLVED, That the Medical Association of the State of Alabama, meeting at Mobile April 15-17, express appreciation for the enthusiastic assistance and intelligent services of Henry P. Johnston, State Campaign Chairman, American Cancer Society, Alabama Division.

RESOLUTION

WHEREAS, The American Cancer Society, Alabama Division, and its Field Army have done outstanding educational and service work in cancer control; and

WHEREAS, Every county in the state has become well organized for cancer control education under the leadership of Mrs. Ray Meade, State Commander and Executive Director; and

WHEREAS, The American Cancer Society, Alabama Division, has cooperated enthusiastically with the Committee on Cancer Control of the State Medical Association to the end that there is much evidence of ever increasing intelligent cancer consciousness throughout the state, therefore be it

RESOLVED, That the Medical Association of the State of Alabama, meeting at Mobile April 15-17, expresses its appreciation for the continuing active, enthusiastic, and intelligent services of Mrs. Ray Meade, State Commander and Executive Director of the American Cancer Society, Alabama Division.

REPORT, ALABAMA DIVISION
AMERICAN CANCER SOCIETY
MRS. RAY MEADE, STATE COMMANDER

The American Cancer Society, Alabama Division, and its Field Army can report continued progress in Alabama during 1947-48. Through the radio, newspapers, magazines, outdoor advertising posters, street car and bus cards, distribution of literature, school programs and innumerable talks there has resulted an interest in cancer control that is gratifying to a great degree.

The Alabama Division has expanded its facilities during the past year to a considerable extent. From total assets of \$792.00 in 1942 to a successful campaign in 1947, resulting in \$122,000 being raised, shows the confidence that the public has placed in the American Cancer Society.

Not only have we a twelve-month educational program going on but we are furnishing transportation whenever needed for indigent cancer patients, buying medicines for these patients, and distributing free of charge some three thousand (3,000) bandages and dressings each month through local Health Departments, Clinics, or directly to cancer patients.

The broad scope of the American Cancer Society cannot fail to impress each of us with a national goal of some sixteen million dollars for 1948. Alabama's quota is \$137,000. Each of us must bend every effort to raise this amount. However, fund raising is necessary only insofar as it enables us to conduct the program we have laid out for Alabama.

We have functioning in this state a unique system of public information committees. These we set up in each county on a year-round basis to give us a continuing program of cancer information through schools, men's and women's organizations, newspapers and radio and rural groups.

The American Cancer Society has just made two allocations of funds for research in Alabama: approximately \$28,000 to the Southern Research

Institute, Birmingham, and about \$7,000.00 to Dr. Albert Casey, Baptist Hospital, Birmingham.

Twenty-five cents out of every dollar that is contributed to the American Cancer Society goes into a National Research Fund. Actually Alabama received more for research than it contributed nationally in 1947.

The State Commander has traveled approximately 29,000 miles during the past year via car, train, bus and plane. She has attended 136 meetings to represent the Cancer Society. She has made ninety-seven (97) talks of approximately thirty-minutes each to men and women's organizations over the state. Literally thousands of talks have been given by our doctors and Field Army personnel in addition.

We are very happy to report that Alabama has a functioning unit in every one of the sixty-seven (67) counties headed by a County Commander. We are also very proud of the fact that we have eight (8) men County Commanders who work with us on a year-round basis:

County	County
Lauderdale	Tallapoosa
Marion	Baldwin
Fayette	Marengo
Bibb	Covington

During the past year the Alabama Division of the American Cancer Society held seven (7) district meetings over the state and one annual meeting in Birmingham.

The Alabama Division is fortunate to have Mr. Henry P. Johnston, Executive Vice-President of The Birmingham News Company and Managing Director of Radio Station WSGN, acting as State Campaign Chairman for 1948. His connection with radio and press has been of invaluable help to us.

Our State Treasurer continues to be Fred A. Duran, Vice-President, Union Bank & Trust Company, Montgomery. His secretary keeps our books as the State Commander handles no funds. Our books are audited as of September 1st by a certified public accountant.

We are, as you know, in the middle of our fund-raising campaign. In this connection National Pharmacy week, April 18-24, is being devoted to cancer control. Free window displays have been supplied to all pharmacists in the state requesting them.

A unique feature of our fund-raising campaign this year will be Coffee Day, April 30th. In connection with the Alabama Restaurant Association, restaurants, soda fountains, cafes, etc., will be asked to contribute the proceeds of their coffee sales that day to the local Division of the American Cancer Society. Suitable posters, coin cans, etc. will be placed in the cooperating restaurants.

The fine cooperation of the Coca Cola Bottling Company, through Crawford Johnson, III is adding greatly to our campaign in many areas. They are assisting us in the distribution and collection of coin cans.

Hundreds of industrial firms, as well as all state departments, use a postage meter slug which says in effect "Early Cancer Is Curable."

Over one hundred and fifty thousand (150,000) mail enclosures have been sent out by different business firms and organizations calling attention to the seven (7) danger signals of cancer.

We continue to be proud of our Industrial Cancer Clinic at Sylacauga. We are now in the ninth six-month examination period of women employees of Avondale Mills.

You may recall that in my report last year I mentioned that the main project selected by the Worthy Grand Matron of the Order of the Eastern Star for 1947 was cancer control. Fifteen thousand (15,000) dollars was contributed to the Alabama Division for a Mobile Cancer Diagnostic Unit. This will be set up under the supervision of the Cancer Committee of the State Medical Association when it deems it advisable.

It should be noted here that the work of the American Cancer Society is always under the supervision of the Medical Association, and we in Alabama are especially cognizant of our responsibility in working with the Medical Association of the State of Alabama and the State Health Department.

We feel very strongly that a much better program in cancer control would result if a Director of Cancer could be employed by the State Health Department. In those states where a Director of Cancer Control is employed, a much better program for the people of the state is the result.

To all of the doctors of the state with whom I have had the pleasure of working, especially the members of the Executive Committee, I want to express my sincere appreciation.

If I have had a part in making the people of Alabama more cancer conscious, more alert, I am rewarded for the work I have tried to do. The American Cancer Society, Alabama Division, and its Field Army continue to educate our citizens to the fact that early cancer in most instances is curable. We realize in so doing that we are placing a great responsibility upon the medical profession. We know, however, that we can count on your full cooperation.

K. F. Kesmodel
Chairman

J. P. Chapman
J. L. Branch
French Craddock, Jr.
John Day Peake

Medical Care and Public Relations

This is your new Committee, appointed by you immediately after our 1947 meeting in Birmingham. The Committee was created by this Association for two reasons: (1) to study carefully and use every means and agency possible to secure more adequate medical care for all the people of Alabama; and (2) to use every possible avenue of approach to reach the people of our beloved state and keep them actively alerted in behalf of health and medical care.

Your Committee is composed of a chairman and ten members, representing every section of our state. The members have been diligent. We had our first, or organizational, meeting in New Orleans on October 24, 1947. We went to that dis-

tant city because the American Medical Association was holding a district meeting there of all the Southern States on Medical Service and Public Relations. We learned much. We then had an all morning meeting of our own and came to the following conclusions: As soon as practical and possible, a public relations agent should be procured on a full-time basis in order to reach the doctors of the state as a whole and the public at large; our prepayment plan for medical care in Alabama seems to be one of the most successful and satisfactory in comparison with others; expansion of the plan is limited by the need of hospital beds which in turn is limited by the need of more nurses; some change in legislation seems to be needed to liberalize the nurse-training program in order to provide more nurses and nursing care.

We next had all day Sunday meetings in Montgomery on November 9, 1947, January 18, 1948, and March 14, 1948. At these meetings we gave careful consideration to all the problems on our agenda. We believe we have laid the foundation for a highly positive progressive program for the medical profession of Alabama.

We are delighted to report that we have employed Mr. W. O. Dobbins, Jr. of Montgomery, Alabama, as our full-time medical care and public relations officer. He is to work for this Association under the guidance of this Committee, and with the sanction and approval of the Board of Censors. Mr. Dobbins, a native of Alabama, is 39 years old. He received his education at Davidson College and Cornell University. His philosophy of government suits this Committee precisely. We sought Mr. Dobbins, he did not seek us. He is a gentleman and a scholar, and we are delighted with him. We shall present him to the Association during this meeting.

Now, in order that this Association may know all the details, the salary of the medical care and public relations director is to be \$6,000 per year. We expect to have \$15,000 per annum as a budget. This is to be provided by the Association from the increased dues of the members. We plan at an early date to have our own office space in Montgomery. At the meeting of this Association one year ago the sum of \$5,000 was appropriated from the general fund to this Committee in order to get this plan started. Only a small portion of this amount has been spent. We are assuming we shall be allowed to use this unexpended balance in getting this program inaugurated.

In its Report on Public Relations to the Colorado State Medical Society, Raymond Rich Associates of New York City said: "A public relations program must take into account not only community reactions to the medical profession but also points of view current within the profession itself. On the part of several of the first doctors interviewed," continued the report, "there was discovered a tendency to minimize the extent of lay dissatisfactions with the practice of medicine ... As a matter of fact it seems safe to say that many, who accept in theory the need for augmented public relations activity, still are not ready to grant the full extent of the problem with which this activity must cope."

It may be then that one of the first duties of the Committee is to see that every member of the profession in Alabama appreciates fully what lies ahead of them unless there is unity of thought and action. The Medical Society of the State of Pennsylvania must share a similar view regarding the situation as it relates to its members for this is the opinion it has expressed: "The newspaper, the radio, the motion picture, the poster, and the booklet are being used in our public relations program. However, they are only the tools . . . only the mechanical channels for reaching the public. They are important, but the attitude and ability of every doctor in our Society actually constitute the basis of public opinion. Every time you look at yourself in the mirror, you see the man who can do the best public relations job for you and your profession. Our public relations cannot be successfully promoted by any one individual or by any group hired to develop this program. This undertaking is a project in which each must do his part, working as a team to inform the people of our desire to be of service to them. There must be no vain hope that a public relations program will be a cover for shortcomings or a substitute for good works, but rather the hope that the straight-forward presentation of our service to the public will enlist their support of our activities." And, in our opinion, that goes for Alabama, too.

Carl A. Grote
Chairman
E. G. Givhan
E. M. Chenault
Frank W. Riggs
E. S. Sledge
Arthur Mazyck
J. P. Chapman
Frank Jordan
B. W. McNease
J. Paul Jones
E. L. Gibson
Douglas L. Cannon

Committee of Publication
Douglas L. Cannon, Chairman

The monthly circulation of the Journal at December 31, 1947 was 1875 copies, 1613 of which went to members of the Association, 86 to exchanges, 69 to advertisers and advertising agents, and the remainder to non-subscribers and the files of the Association.

Advertising and miscellaneous Journal receipts in the calendar year 1947 amounted to \$11,883.73. Cost of publishing and distributing the publication was \$11,251.01. It will be seen from these figures that the Journal continues to be self supporting.

Transactions, also, were furnished the members of the Association, and the cost of this item was \$768.10.

Report of the Secretary-Treasurer

Douglas L. Cannon

MEMBERSHIP OF THE ASSOCIATION

The membership of the Association, as enrolled April 1, 1948, is 1652, greater by 23 than the num-

ber reported a year ago, which, even then, was the largest membership in the Association's history. Of the state's 1856 physicians, 89 per cent are identified with the Association. It is too early to know whether this will be reduced because of increased dues now in effect but early returns from County Medical Societies give no indication of such a trend. It is hoped that at this critical period in the history of American Medicine all of the physicians of the state will want to lend support to a vigorous public relations program to be financed by the new schedule of dues.

DEATHS

Since the report of 1947, forty-four (44) members of the Association have died, including Dr. Fred W. Wilkerson, President in 1944 and a Life Counsellor; Active Counsellors, Drs. W. Hill McCaslan, D. S. Moore, Jr., and James Tankersley; and Counsellors-Elect, Drs. W. S. Chapman and Oliver W. Welch. The complete obituary record follows:

Blackshear, G. W.	Opelika
Bonner, W. W.	Rock Mills
Burleson, J. R.	Hamilton
Camp, W. A.	Cullman
Chapman, F. E.	Jackson
Chapman, W. S.	Jackson
Christian, J. S.	Alberta City
Cleveland, C. Hal	Anniston
Cochran, J. P.	Birmingham
Cross, E. H., Jr.	Gadsden
Curtis, R. C.	Calera
Davis, C. A.	Kennedy
Davis, J. L.	Gordo
Fonde, G. H.	Mobile
Franklin, C. M.	Union Springs
Gay, C. P.	Geneva
Gay, J. S.	Ashland
Grant, C. A.	Goshen
Green, Elbert Paul	Birmingham
Griffin, I. H.	Moundville
Hays, Luther	Cullman
Hogan, R. E.	Ensley
Hyatt, E. M.	Albertville
Maples, J. M.	Killen
McCaslan, W. Hill	Union Springs
McCraw, R. T.	Oxford
Minus, J. A.	Eples
Moore, D. S., Jr.	Birmingham
Riley, H. C.	Coffee Springs
Rudder, J. W.	Toxey
Stephens, A. R.	Delta
Stephens, D. D.	Slocomb
Tankersley, James	Prattville
Wall, Conrad	Forest Home
Wallace, S. H., Jr.	Birmingham
Warwick, B. B.	Talladega
Welch, Oliver W.	Fairfield
Westcott, W. B.	Montgomery
White, R. L.	Mt. Andrew
Wilkerson, Fred W.	Montgomery
Wilks, A. E.	Powderly
Wimberly, G. B.	Reform
Winters, H. H.	Tuskegee
Wright, R. A.	Mobile

THE ASSOCIATION'S TAX STATUS

On September 8, 1947 the Office of the Commissioner of Internal Revenue furnished the Secretary of the Association a form of affidavit designed to develop all facts necessary to a determination of the Association's tax status under the Internal Revenue Code of the Federal Government, the affidavit to be supported by financial statements, articles of incorporation, and a copy of the Association's Constitution and By-Laws. The request of the Commissioner was fully complied with, and on December 1, 1947 his office advised that the Association is exempt from Federal income tax. For the record, the letter is reproduced herewith:

The Medical Association of the State of Alabama
c/o Dr. Douglas L. Cannon, Secretary-Treasurer
519 Dexter Avenue
Montgomery, Alabama
Gentlemen:

It is the opinion of this office, based upon the evidence presented, that you are exempt from Federal income tax under Section 101 (7) of the Internal Revenue Code and corresponding provisions of prior revenue acts.

Accordingly, you will not be required to file income tax returns unless you change the character of your organization, the purposes for which you were organized, or your method of operation. Any such changes shall be reported immediately to the collector of internal revenue for your district in order that their effect upon your exempt status may be determined.

You will be required, however, to file annually an information return on Form 990 with the collector of internal revenue for your district so long as this exemption remains in effect. This form may be obtained from the collector and is required to be filed on or before the 15th day of the fifth month following the close of your annual accounting period.

The collector of internal revenue for your district is being advised of this action.

By direction of the Commissioner.

Signed: E. I. McLarney
Deputy Commissioner

PRESIDENTIAL APPOINTMENTS

To serve until this meeting, President Chapman appointed Dr. E. G. Givhan, Jr., Birmingham, a Censor to succeed Dr. Lloyd Noland, whose term would have expired in 1949 and who resigned February 11, 1948; and Dr. Frank Jordan, Huntsville, Vice-President of the Northeastern Division of the Association, because of the election to the Board of Censors of the incumbent, Dr. J. O. Morgan, to fill, until 1950, the unexpired term of Dr. M. S. Davie, deceased. Dr. Morgan's term as Vice-President would have expired in 1950.

As delegate and alternate, respectively, in the House of Delegates of the American Medical Association, President Chapman appointed Drs. Lloyd Noland and D. G. Gill, their terms to expire with the 1949 regular session of the national body.

Committee appointments were made as follows: On the newly created Committee on Medical Care and Public Relations—Drs. C. A.

Grote, Chairman, E. G. Givhan, Jr., E. M. Chénault, F. W. Riggs, E. S. Sledge, Arthur Mazyck, Frank Jordan, B. W. McNease, J. Paul Jones and E. L. Gibson, with the President and Secretary of the Association ex officio members; Mental Hygiene—Dr. F. A. Kay; Maternal and Infant Welfare—Dr. A. E. Thomas, Montgomery; Cancer Control—Drs. John Day Peake and John L. Branch; Prevention of Blindness and Deafness—Dr. Karl Benkwith; Postgraduate Study—Dr. Cabot Lull; Accidents and Industrial Hygiene—Dr. Marcus Skinner; and Physician-Druggist Relationships—Dr. R. R. Kracke. By recommendation on the part of President Grote in his 1947 Message to the Association a Committee on Contract Practice was created with committeemen as follows, named by President Chapman: Drs. Ivan C. Berrey, Chairman, W. H. Blake, Jr., K. E. Luckie, Oliver W. Welch and D. O. Wright. On the death of Dr. Welch, October 21, 1947, Dr. H. H. Henderson, Jr., was named his successor. At the request of some of the anesthesiologists of the state, a Committee on Anesthesiology was provided by the Association in 1947 and on it were named Drs. E. B. Robinson, Jr., Chairman, Alice McNeal and Sid W. Collier. It was the Board's recommendation that a group of three be designated to study the number and equitable distribution of Counsellors most suitable for the changing conditions in our Association, and to report back at this meeting. Those designated to serve were Drs. George A. Denison, Chairman, J. M. Weldon and C. S. Cotlin, Jr.

STATUS OF COUNSELLORS-ELECT

At the last meeting of the Association, eight members—Drs. Will S. Chapman, Wallace A. Clyde, Henry A. Darby, James O. Finney, D. G. Gill, William G. McCown, B. W. McNease and Oliver Welch—were elected Counsellors. Drs. Chapman and Welch are deceased. The others have qualified fully as required by the Constitution and should be added to the Roll of Active Counsellors when the revision is made on Saturday morning.

OFFICERS TO BE ELECTED

Officers to be elected at this session are a President, a Vice-President of the Northeastern Division to fill, until 1950, the unexpired term of Dr. J. O. Morgan who was elected a Censor in 1947 and in whose stead Dr. Frank Jordan has been serving in the interim; a Vice-President of the Northwestern Division to succeed Dr. B. W. McNease whose term expires with this meeting; a Censor for one year to complete the term of Dr. Lloyd Noland, resigned, Dr. E. G. Givhan, Jr., having been named in his place to serve until this session of the Association; and two Censors for five years to succeed Drs. French Craddock, Sr. and Dr. John L. Branch whose terms expire with this meeting.

There are to be elected, also, 18 Counsellors: *From the 1st Congressional District*, 1. Dr. W. S. Chapman is deceased. *From the 2nd*, 2. Dr. Douglas L. Cannon is to be elevated to Life Counsellor; Dr. W. R. Carter's second term of seven years has expired. *From the 3rd*, 4. Dr.

F. G. Granger is to be elevated to Life Counsellor. Dr. C. T. Jones's first term of seven years has expired. Dr. W. Hill McCaslan is deceased. Dr. G. R. Smith's second term of seven years has expired. *From the 4th*, 3. The second terms of seven years of Drs. J. F. Alison and W. M. Salter have expired. Dr. James Tankersley is deceased. *From the 6th*, 2. Dr. M. H. Eskew's second term of seven years has expired. Dr. W. J. B. Owings' first term of seven years has expired. *From the 7th*, 1. Dr. M. S. Whiteside's first term of seven years has expired. *From the 8th*, 2. The first terms of seven years of J. C. Bragg and A. M. Roan have expired. *From the 9th*, 3. The first term of seven years of R. E. Cloud has expired. Drs. D. S. Moore, Jr. and Oliver W. Welch are deceased.

APPOINTMENTS TO BE MADE

Committees presenting vacancies because of expiration of term are: Mental Hygiene (Dr. J. S. Tarwater), Maternal and Infant Welfare (Dr. T. M. Boulware), Cancer Control (Dr. K. F. Kesmodel), Prevention of Blindness and Deafness (Dr. Lucien Brown), Postgraduate Study (Dr. Ralph McBurney), Accidents and Industrial Hygiene (Dr. Benjamin Meyer), Physician-Druggist Relationships (Dr. R. E. Cloud), and Anesthesiology (Dr. Sid W. Collier). It will be a responsibility of the next President to make these appointments and to designate a delegate and an alternate to the American Medical Association to succeed Drs. A. A. Walker and G. O. Segrest, respectively, whose terms will expire with the current year's regular meeting of the A. M. A.

FINANCE

The accounts of the Association for the year 1947 have been audited by Crane, Jackson and Wilson of Montgomery, and the audit constitutes the concluding pages of this report.

In the audit will be found not only statements of cash receipts and disbursements but a record of securities owned by the Association—all U. S. Government Bonds that have been purchased

through authority given by the State Board of Censors, and which are in the Association's deposit box in the First National Bank of Montgomery.

Officers and Members,
The Medical Association of the State of Alabama,
Montgomery, Alabama.

Gentlemen:

We have examined the cash accounts of the Treasurer of the Medical Association of the State of Alabama for the year ended December 31, 1947, and submit the following statements:

Exhibit "A" Summary Statement of Cash Receipts and Disbursements for the Year Ended December 31, 1947

Exhibit "B" Analysis of Cash Disbursements for the Year Ended December 31, 1947

Exhibit "C" Securities Owned, December 31, 1947

Our audit procedure included the tracing of all recorded receipts to the record of deposit of funds as indicated by bank statements submitted for our examination. All returned paid bank checks, together with their supporting vouchers, were examined as to signature and endorsement and were vouched to the record of Cash Disbursements. Mechanical accuracy of records was checked and proved.

The balance of cash on deposit at December 31, 1947 as indicated in Exhibit "A" was verified by direct correspondence with the depository.

Securities owned by the Association were examined by us, on March 8, 1947, in the Safe Deposit Vault of the First National Bank of Montgomery, Alabama, in company with Dr. Douglas L. Cannon. A schedule of these securities is submitted as Exhibit "C".

Respectfully submitted,
Crane, Jackson and Wilson
Certified Public Accounts
By James Wilson, C. P. A.

Exhibit "A"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA SUMMARY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED DECEMBER 31, 1947

Balance January 1, 1947:

First National Bank Montgomery, Alabama:

Checking Account	\$ 5,522.59
Savings Account No. 1973	1,309.27
	<u>\$ 6,831.86</u>

Cash Receipts:

Association:

County Dues	\$ 5,426.00
Counsellors	930.00
Rosters of Association	39.00
Interest on Savings Account	13.11
	<u>\$ 6,408.61</u>

Journal:

Advertising	\$10,619.70
Subscriptions	69.00
Cooperative Medical Dividend	1,155.51
Excess Cuts	39.52
	<u>11,883.73</u>
	<u>\$18,292.34</u>

Cash Disbursements (Exhibit "B"): -----

Association	\$ 4,450.76	
Journal	11,251.01	15,701.77
Excess—Receipts Over Disbursements		\$ 2,590.57
Add: Balance January 1, 1947		6,831.86
Balance December 31, 1947		<u>\$ 9,422.43</u>

Consisting of:

First National Bank, Montgomery, Alabama		
Checking Account	\$ 8,100.05	
Savings Account No. 1973	1,322.38	
		<u>\$ 9,422.43</u>

Exhibit "B"

THE MEDICAL ASSOCIATION OF THE
STATE OF ALABAMA
ANALYSIS OF CASH DISBURSEMENTS
FOR THE YEAR ENDED DECEMBER 31, 1947

Association:

Salary—Dr. D. L. Cannon	\$ 550.00	
Printing, Stationery and Office Supplies	1,160.53	
Postage	204.90	
Treasurer's Bond	100.00	
Expense of Annual Meeting		
Programs	\$ 119.85	
Badges	92.75	
Lecture	100.00	
Announcements	40.80	
Miscellaneous	24.69	378.09

Jefferson County Medical Society on Expenses of 1947 Session of the Association

Crane, Jackson and Wilson, Audit Fee	500.00	
Plaque—4 Year Medical School	273.00	
Medical Care and Public Relations Committee	359.57	
Post Graduate Seminar—Mobile	836.28	
Citations, Senator Henderson	5.10	
Dues Refunded	10.00	
Maternal and Infant Welfare Committee	12.00	
Dues—Health and Medical Care Council	5.00	
Rent Safety Deposit Box	6.00	
Bank Exchange .....	.29	

\$ 4,450.76

*Journal:**Salaries:*

Douglas L. Cannon, M. D.	\$ 600.00	
Luette Kilpatrick	620.00	
William W. Wilkerson, M. D.	300.00	\$ 1,520.00
Clerical Assistance	10.00	
Printing and Mailing Journal	9,721.01	

11,251.01\$15,701.77

Exhibit "C"

THE MEDICAL ASSOCIATION
OF THE STATE OF ALABAMA
SECURITIES OWNED
AT DECEMBER 31, 1947

Number	Type	Date of Issue	Purchase Price	Redemp- tion Value 12-31-47	Increase	Date of Maturity	Maturity Value
20	\$500.00 Series "C" U. S. Government War Savings Bonds, Numbered D459763 to D459782, inclusive	Oct. 11, 1938	\$ 7,500.00	\$ 9,600.00	\$ 2,100.00	Oct. 1, 1948	\$10,000.00
7	\$500.00 Series "F" U. S. Government War Savings Bonds, Numbered D191057 to 191063, inclusive	July 1, 1943	2,590.00	2,716.00	126.00	July 1, 1955	3,500.00
6	\$500.00 Series "F" U. S. Government War Savings Bonds, Numbered D22060 to D22065, incl.	Jan. 1, 1944	2,220.00	2,301.00	81.00	Jan. 1, 1956	3,000.00
4	\$500.00 Series "F" U. S. Government War Savings Bonds, Numbered D27410 to D27413, inclusive	June 1, 1944	1,480.00	1,534.00	54.00	June 1, 1956	2,000.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds, Numbered D385709F to D385711F, inclusive	May 1, 1945	1,110.00	1,131.00	21.00	May 1, 1957	1,500.00
11	\$500.00 Series "F" U. S. Government War Savings Bonds, Numbered D386331 F, D386367F to D386369F, inclusive, D386371F, D386-373 to D386376F, inclusive, D386378 to D386379, inclu- sive	Nov. 1, 1946	4,070.00	4,070.00		Nov. 1, 1958	5,500.00
			<u>\$18,970.00</u>	<u>\$21,352.00</u>	<u>\$ 2,382.00</u>		<u>\$25,500.00</u>

*Report of Vice-President Jones**Southwestern Division*

There is a great amount of interest in our Division in the actions of the Association. However, very few doctors understand the why and wherefore of the \$15 increase in dues and the need for improvement in our public relations.

A few young men are drifting back to counties in our Division, but too few. There is much public interest in the Hill-Burton Bill, but few counties have gone as far as building a small hospital.

We had one meeting in our Division last year, with the Gulf Coast Clinical Society. As has been the case in the past few years the attendance was small.

The Academy of General Practice is accepting applications from Alabama doctors. If any of you are interested, I have a few applications.

I have served as your representative on the A. M. A. Committee on Rural Medical Service. The Committee has done a fine job in working with farm groups to help in devising some way of increasing medical care in rural areas. If we are to assist rural communities to secure doctors and dentists we should work with rural people in procuring from the Legislature a definite ap-

propriation for rural hospitals. A good many counties in the Southwestern Division would build a hospital if assured of state aid in construction and maintenance.

*Report of Vice-President McNease**Northwestern Division*

During the past year two meetings were held in the Northwestern Division of the Medical Association of the State of Alabama. The first was at the Key Club in Cullman on the afternoon of January 6, 1947 with the Cullman County Medical Society as host. It was well attended, and an excellent scientific program was enjoyed. The program was developed by Dr. Roy R. Kracke, Dean of the Medical College of Alabama, and presented by the following members of the faculty of the Medical College: Drs. Wm. H. Riser, Jr., James M. Mason III, Beach Chenoweth, J. Garber Galbraith and Ray O. Noojin.

The second was held at the Druid City Hospital in Tuscaloosa on the evening of February 25, 1948 with the Tuscaloosa County Medical Society as host. This meeting was attended by the largest number of doctors it has been my pleasure to see at a district meeting. In addition, there were present, on invitation, members of the faculty of

the University of Alabama, and personnel of the U. S. Veterans Facility located at Tuscaloosa. Special guests and essayists included our President, Dr. J. P. Chapman of Selma, Dr. L. V. Rush of Meridian, Miss., Dr. Henry Walker of the University of Alabama and Mr. M. B. Holmer of the U. S. Veterans Facility, Tuscaloosa.

Physicians of the district contributing to the success of the meeting included the following: Drs. Harvey B. Searcy, J. S. Tarwater and R. M. Clements of Tuscaloosa, and Drs. H. M. Simpson and Wyatt Simpson of Florence.

Regular monthly meetings with good scientific programs are being held by several of our County Medical Societies while others hold an occasional meeting only. Business meetings are held by all once a year.

The chief problems in our Division continue to be the scarcity of physicians in most of the rural counties, and the general lack of adequate hospital facilities. Some of the counties of the district have perfected the necessary organization and plans for building hospitals or health centers under the provisions of the Hill-Burton Act, but as yet no actual construction has begun.

Report of Vice-President Gibson

Southeastern Division

I am especially grateful to you for having honored me by election to the Vice-President's office for the Southeastern Division of this Association.

Most of the counties in the Southeastern Division are rural and have very few doctors located in them. In the 17 counties of this Division we have 308 members and more than one-third of these are located in Montgomery County. Very few of the counties in this district are holding regular meetings. It is our desire to visit each of these counties during the next 12 months in an effort to stimulate more interest in county society work. In this district there are 628 hospital beds available for care of the sick. Eight counties have no hospital or clinical facilities. We have one doctor for each 1500 in population. We have one hospital bed for each 900 people in the district.

Your Vice-President has attended all of the committee meetings of the Committee on Medical Care and Public Relations held during the past 12 months. He did not attend the meeting in New Orleans.

We have had one district meeting which was held in March and it was fairly well attended. The Coffee County Medical Society was host and we had 8 essays on interesting common everyday medical problems. We were honored by the attendance of Dr. J. P. Chapman, our President who gave us a very interesting talk on the State Medical Association. We had with us, also, Dr. Douglas L. Cannon, Secretary of this Association, who gave us an enlightening talk on public relations and the welfare of our organization.

Report of Vice-President Jordan

Northeastern Division

Acknowledgement is made of the high honor I received by the appointment to the vice-presi-

dency of the Association for the Northeastern Division. Being a new comer and inexperienced in the duties I trust that I have fulfilled the functions of the office by engaging in every activity and by attendance upon district meetings, the meeting of the A. M. A. and the divisional meeting of the Southeastern Section of The American Medical Association where the organization of the Committee on Medical Care and Public Relations was effected, as well as attending subsequent meetings of this Committee held in Montgomery. I also made a trip to California and conferred with officers of the California Medical Association, who have made a great success of their program of medical care and public relations and offered effective opposition to a very determined drive for State Medicine. I would like to say that the dues to the California Association are \$125.00 a year, \$100 of which goes into the program for the State Association and much of the money is spent in public relations activities and advertising. I make mention of this since our own dues have been increased to \$20.00 this year, which is small in comparison and scarcely adequate to carry out in an effective manner the work that is needed.

On October 30th a scientific meeting for the Division was held in Anniston at which place the hospitality of the Calhoun Medical Society and Medical Auxiliary was outstanding and most enjoyable. The meeting was well attended and the papers presented were excellent and on a high order of scientific medicine. The papers were given by members of the staff of The Medical College of Alabama and credit and thanks are made for their contribution to the success of the meeting. Preceding the scientific session a barbecued chicken luncheon was served and the friendly social relations were evident and gratifying.

Doctors of the Division have been mailed at regular intervals original pamphlets and letters asking cooperation and help in our effort to advance public relations and have been kept posted on the activities of the Committee on Medical Care and Public Relations. The doctors are to be commended that fees have not been increased, with but few exceptions, and the effort to hold the line has been noted by the public and has been helpful in the matter of improving public relations.

The work of the officers of the State Medical Association has been diligent throughout the year and has advanced the best interests and success of the profession. Mention is made of the activities of the Woman's Auxiliary with marked increase in membership and new societies organized. I therefore propose to this Association that funds and wider recognition be given this valuable asset. The talent, the enthusiasm and the willingness to work through clubs, church and friend can advance the interest of the profession tremendously. Funds assigned by the Association to enlarge their program is well indicated and will give returns of a highly profitable investment. There is much work ahead that is necessary to protect and preserve medicine as a free enterprise.

The President's Message

The Medical Association of the State of Alabama is delighted with the opportunity of coming to Mobile for its annual convention. Seven years have passed since our last meeting here, and we have indeed missed the hospitality of this fine convention city. We are grateful to our host, the Mobile County Medical Society, for the invitation to visit you this year, and appreciate very much the excellent preparation and entertainment arranged for us.

The President is deeply appreciative of the honor of serving this Association during the past year, and feels a sense of regret that this privilege and pleasure will soon come to an end. His message today will not contain recommendations of a radical nature but will render an accounting of his stewardship, and offer suggestions which he hopes will be acceptable.

OFFICIAL MEETINGS

During the past year many meetings of a medical and non-medical nature have been attended as the official representative of the State Medical Association. It would have been of great pleasure and profit to visit each County Medical Society but that was obviously impossible, yet the President has enjoyed attending the Division meetings, with Vice-President Jones in Mobile, Vice-President Jordan in Anniston, Vice-President McNease in Tuscaloosa, and Vice-President Gibson in Enterprise. The meetings were all well attended, the programs were of a high order, and the entertainment was delightful. It was generally agreed that these division meetings were worth while, and the presidential commendations are hereby extended to each Vice-President for the excellent work done in his Division.

It has been most helpful to meet with the State Board of Censors during most of its business sessions. The President has been greatly impressed with the quality of its work, and desires to pay tribute to the dignity of this body, as well as to the seriousness and faithfulness with which each member has accepted his responsibility. Indeed, they are medical statesmen, whose personal sacrifices in doing their work, their loyalty to the best interests of the State Medical Association and the cause of public health, should command your appreciation and call for the unanimous commendation for their services.

STANDING COMMITTEES

The work of the standing committees has been well done. The reports you have heard read indicate the seriousness with which their assignments have been approached and executed. Much of the committee work has been arduous, requiring careful and detailed investigation. Our appreciation is extended to each member of the various committees, and especially the chairmen for their progressive leadership. Some of the specific recommendations of certain committees are briefly summarized as follows: The Workmen's Compensation Law should be amended to provide additional medical benefits; the study of Counsellor distribution reveals the need for re-

distribution of Delegates; the need for cancer instruction and the holding of seminars for physicians during the year is emphasized, along with an appeal for the employment of a trained director for the state cancer program; the need of investigation of the large number of maternal deaths in certain counties; the conclusion that the Association's regulations regarding contract practice are adequate for the present; the expansion of the program for postgraduate study, which was so successful last year; the approval of the selection by the committee of a full-time Director of Public Relations. A review of the conclusions and recommendations of all of these committees is not necessary.

APPOINTMENTS

A report should be made of the official acts of the President since the Birmingham meeting last April. Dr. Lloyd Noland was reappointed a delegate to the American Medical Association. Dr. Frank Jordan was appointed Vice-President of the Northeastern Division, to fill the unexpired term of Dr. J. O. Morgan, elected to the State Board of Censors. Dr. E. G. Givhan, Jr. was appointed to the State Board of Censors to fill the unexpired term of Dr. Lloyd Noland, resigned on account of ill health. The various committees were filled with new appointments, and others were created in keeping with the mandates of the Association.

The Medical Association should recognize, with special commendations, the excellent work of the Alabama Pharmaceutical Association in safeguarding the public welfare by promoting legal control of the barbiturate traffic. We should cooperate with our pharmaceutical confreres in an effort to stop the indiscriminate use and abuse of sedatives and other harmful drugs which the public engages in.

MEDICAL ETHICS AND PUBLIC RELATIONS

Periodically, it is desirable for our Association to have its attention directed to the need of maintaining the high standards of ethics to which each of us subscribes. The practice of the Golden Rule in the relation of physician to physician, and physician to patient, is the best form of public relations and professional ethics. We have come a long way since the days of the family physician, who, in the years gone by, was the hero, the ideal citizen and the highest expression of unselfish service. The physician of modern times still occupies an exalted position of respect and confidence, and exerts a tremendous influence in his community. He is rendering a much superior type of medical service than ever before. Yet, one can observe frequently a tendency to criticize, publicly and privately, the doctor of today. Is this through any fault of his own? Let each of us remember that the best and most effective public relations agent is the physician himself, along with the personnel in his office. There must be no occasion for even the slightest deterioration in the respect and confidence of the public.

The recent publicity and criticism of the profession regarding certain commercial practices cannot be passed without notice. We are not here assembled to condemn, or condone, or pass

judgment on the basis of mere publicity but we recognize that the medical profession is never benefited by such attacks, even when greatly exaggerated or unjustified. Our Association should again state its position as disapproving all practices that have the appearance of division of fees, exploitation of the patient, or savor of commercialism. If we become involved in a practice, voluntarily or innocently, which now or later is declared unethical, such activity should immediately be discontinued.

The dream of a nationalized medical service program has not yet come to an end. Whenever there is a social need, there will be an effort to provide a social relief. In the realm of illness and disease we hear cries against the cost of medical, nursing and hospital care. Sometimes the acute illness, but more frequently the prolonged disability, becomes a financial burden to the individual and the family. Illness is expensive to those who spend for conveniences and luxuries but fail to provide for the emergency of sickness. No one can fail to recognize that in every community there is a certain group with low incomes who receive inadequate or no medical care. This is the rationale of the social effort to formulate a compulsory sickness insurance program. It is interesting to read the recent report of the Brookings Institute in which the opinion is expressed that a compulsory medical service plan will involve too much politics and governmental control, with no improvement in the type of service but will actually increase the cost of medical care. Governmental effort cannot compel a man to keep well, any more than it can compel him to be well fed, well clothed, well sheltered or well behaved.

If we would continue the practice of medicine as in the past, or at the present, we must make the voluntary prepayment medical and hospital care plan effective over a greater percentage of the population. All voluntary prepayment plans depend upon the ability to "prepay," and, while we are making great progress in this field, we have not yet developed a suitable plan that will cover the large group of low income people, white and colored, who are still in need of better hospital facilities and medical services. If such is not provided soon, we can expect an increasing pressure for a nationalized program. We must ever strive to make our American way of life, the principle of freedom of enterprise, apply to the individual in his right to keep well, as well as to the medical profession in its freedom of method to make him well.

THE NURSING PROBLEM

We have not yet recovered from the disrupted and dislocated condition of professional groups incident to the war activities and demands. Return to normal has been slow. Particularly is this felt in the limitation of nursing service available to hospitals and private practice. It is reported that there are now 400 vacancies in nurse training schools of Alabama. Recruiting is slow and not satisfactory. Regardless of why this situation exists, the Medical Association should become more actively interested in aiding the Nurses' Association in improving this con-

dition. There is much that the local physician can do to solve this problem. It seems to me that the physician and the trained nurse have the same high purpose and motivation in offering their services to meet human needs, and a more effective job can be done if both will work in a spirit of understanding and mutual helpfulness.

THE NATIONAL BLOOD PROGRAM

The American Red Cross has proposed a program of blood taking and processing for civilian use, paralleling that of war time activity. Although approved by many national medical bodies, it has not been presented to our Association for consideration. This program is mentioned now merely to say that our policy has been to always cooperate with any progressive public welfare program, but when operation in our state is contemplated it should be worked out in close cooperation with the state health authorities.

THE FIFTY YEAR CLUB

For sometime it has seemed desirable to do something for the doctors who have given many years of service, faithfully and with personal sacrifices, to answering the calls of suffering humanity day and night. Many state medical associations have honored their members who have practiced medicine for fifty years or longer, and this year our Association will give an award to all members who graduated in 1898 or earlier, and in this modest way congratulate them on their golden anniversary of professional services. It seems desirable to honor annually each member as he reaches this stage in his professional career. In consideration of our members who sometime in their declining years may need more than eulogies and awards, our Association should plan a more material form of benefit for them. The Medical Association is the only organization the physician can look to for assistance. We are not now ready to enter the insurance business but some form of security should be planned in the future.

STATE MEDICAL BUILDING

The State Medical Association has for many years used the State Department of Health as its headquarters. It appears now that our Association should begin thinking of its own building. With the employment of a Director of Public Relations, the need for office space has become urgent. There will be further expansion in line with a progressive medical program, so that it is not premature to think about a building of our own. Other states have fine and impressive medical association buildings; why cannot we have one also? The State Treasury makes a refund to the County Medical Societies of over \$10,000.00 each year out of the privilege license taxes paid by physicians. If it were legally possible to use this fund with the consent of each County Medical Society, supplemented by individual contributions, this project would be assured.

RECOMMENDATIONS

In viewing the structure of our organization, it seems desirable to stream-line and modernize

our standing committees in order to broaden the field of activity. There are certain suggestions I would like to make:

1. The Committee on Medical Care and Public Relations should change the first part of its name from "Medical Care" to "Medical Service" in order to conform to similar committees in other states. The status of this committee, which was appointed by me, should be clarified by recommending that the President and the Secretary of the Association become ex-officio members, and the other ten members be divided so the terms of two will end each year. The membership has therefore been grouped so that the term of service of Drs. Sledge and Chenault will end in 1948; Jordan and Grote in 1949; Gibson and Jones in 1950; Riggs and Mazyck in 1951; and Givhan and McNease in 1952.

2. With the presentation of its report, the Committee on Contract Practice has completed its assignment and should be discontinued. The Committee on Accidents and Industrial Hygiene should broaden its field to include all matters of industrial relations, medical care, contracts, as well as the limited sphere of accidents and sanitation. My suggestion is, therefore, that the name of this activity be changed to Industrial Medicine, retaining the personnel of the present Committee on Accidents and Industrial Hygiene.

3. The Committee on Prevention of Blindness and Deafness is so limited in its scope and its problems are so difficult to control that I would suggest it be discontinued. The effort to conserve sight and hearing certainly should be carried out by the men specializing in these fields. We appreciate the efforts of members of this committee during the past years to stimulate interest in these problems. If the Committee is continued, it should be designated the "Committee on Sight and Hearing Conservation," with representatives of both fields serving on it.

4. The Committee on Counsellor Distribution has made an extensive survey into the problem of delegates, indicating an inequality of distribution that should be reported next year. I believe this committee should be continued for a supplemental report at the 1949 session on the question of delegates.

5. The Committee on Maternal and Infant Welfare has been engaged in a broader scope of service than the name would indicate and so I would suggest that it be designated the Committee on Maternal and Child Health in keeping with the name of the Bureau of the State Board of Health in the same field.

6. There should be an active Committee on Tuberculosis Control in the Association. It is suggested that a committee of three be appointed for this work.

COORDINATION OF COMMITTEES

In conclusion, it is my opinion that the work of the various committees is so important that every member appointed should be willing to serve, and that before being assigned to any committee the member should indicate in writing his acceptance and desire to serve. One inactive member destroys the effectiveness of any committee. Likewise the work of each committee can be of serv-

ice to the Association only when working in close cooperation with the State Health Department. Therefore I would urge the State Health Department to encourage these committees to meet with Bureau directors in conferences in order to promote closer cooperation in the functioning of the state program.

The office of the vice-president is a very great honor and should be coveted by the members of the Association. In order not to overwork an efficient and willing member, and to give the honor of the office to as many members as possible, I would suggest that the office always be rotated after the usual term of four years of service.

It has given me very great pleasure to serve as your President during the past year. I have endeavored to perform all duties of the office to the best of my ability. Again I thank you most sincerely for this great honor you have bestowed upon me.

Scientific Program

Dr. S. Ralph Terhune, Birmingham, read a paper on Treatment of Congenital Club Foot.

Dr. Wyatt C. Simpson, Florence, discussed the Surgical Treatment of Carcinoma of the Esophagus.

Some Clinical Aspects of Auricular Fibrillation were dealt with by Dr. Clarence K. Weil, Montgomery.

Miscellaneous Business

Resolution relating to rebates, kickbacks and commissions introduced by the Committee on Medical Care and Public Relations was referred to the State Board of Censors.

Similarly referred was a communication from the Alabama Society of Anesthesiologists, Alabama Association of Pathologists, and the Alabama Radiological Society.

Afternoon Session, Thursday, April 15

1:45 P. M.

Dr. Joe W. Perry, Montgomery, read a paper on Some Medical Complications of Pregnancy, and it was discussed by Dr. Robert F. Monroe, Assistant Clinical Professor of Obstetrics and Gynecology, University of Louisville School of Medicine.

Drs. James B. McLester, Birmingham, and C. W. C. Moore II, Talladega, discussed the Use of Antibacterial Agents in Respiratory Tract Infections.

Recent Advances in Cancer Research were dealt with by Dr. Stanley P. Riemann, Director, Lankenau Hospital Research Institute, Philadelphia.

a paper on the Use of Sedatives, Hypnotics and Analgesics in General Practice.

Dr. Perry P. Volpitto, University of Georgia School of Medicine, Augusta, presented Drs. Tom D. Spies and Robert Stone, Birmingham, discussed Recent Developments in Nutrition.

From 5:00 to 7:00 P. M., Dr. and Mrs. J. U. Reaves entertained at a reception at their home, 1862 Government Street, with all members of the Association and the Auxiliary and guests of the Association as honorees.

Evening Session, Thursday, April 15

8:00 P. M.

Dr. Walter G. Haynes, Birmingham, read a paper on The Major Neuralgias.

Dr. Andrew B. Rivers, Mayo Clinic, Rochester, Minn., dealt with Perforating Peptic Ulcers, and illustrated his presentation with a motion picture.

Dr. Robert L. Bennett, Director of Physical Medicine, Georgia Warm Springs Foundation, Warm Springs, Georgia, read a paper on Adequate Care of Poliomyelitis.

Psychosomatic Medicine was discussed by Dr. Henry B. Gwynn, Mobile.

Second Day

Friday Morning, April 16

9:00 A. M.

Specializing in the General Practice of Medicine was the subject of the presentation of Dr. R. R. Kracke, Dean of the Medical College of Alabama.

Dr. Virgil S. Counsellor, Mayo Clinic, Rochester, Minn., discussed the Surgical Treatment of Diverticulitis of the Colon.

Dr. Henry G. Poncher, Head of the Department of Pediatrics, University of Illinois College of Medicine, Chicago, read a paper entitled Pediatric Hematology in Every Day Practice.

Dr. Eugene A. Stead, Jr., Department of Medicine, Duke University, Durham, N. C., had for his subject Studies Using the Technique of Venous Catheterization.

In the name of the Association, President Chapman presented to the Medical College of Alabama through its Dean, Dr. R. R. Kracke, a bronze plaque honoring the Committee of the Association that worked to establish the College. The plaque was inscribed:

This College is a living memorial to the members of the Four-Year Medical School Committee of the Medical Association of the State of Alabama, whose efforts in its behalf led to its creation. In their honor, this plaque is erected by the Association

The Committee

W. D. Partlow, Chairman	
E. V. Caldwell	John H. Blue
J. P. Collier	E. B. Frazer
S. A. Gordon	S. L. Ledbetter, Jr.
B. F. Austin	P. P. Salter
A. M. Walker	

1947

Harvey B. Searcy
Chairman of the Plaque Committee

There were recognized, also, by President Chapman all those members of the Association who had been practicing their profession for 50 years or more, and the following certificate was awarded them.

Certificate of Distinction

50 Years

In the Practice of Medicine



This is to certify that

has practiced his chosen profession of medicine for fifty years, or more, and that through his proficient and untiring ministry of the science of healing has done honor to his God, his community, his profession, and himself.

In Recognition

of his unselfish devotion to his patients and his loyalty to the medical profession, the Medical Association of the State of Alabama does hereby award him this Certificate of Distinction.

President

April 16, 1948

Secretary

Those receiving certificates of distinction were as follows:

**THE FIFTY YEAR CLUB
PHYSICIANS OF ALABAMA WHO HAVE BEEN IN
PRACTICE 50 YEARS OR MORE**

Abercrombie, Henry S.	Krout, Charles F.
Abernethy, William L.	Leach, Sydney
Acker, P. J. M.	Lidikay, Charles J.
Alison, Samuel B.	Long, William W.
Allen, Arthur R.	Lovelady, William H.
Argo, Eugene	Manasco, Titus
Bains, Richard C.	Mason, Francis H.
Beasley, James W.	Mastin, Orville C.
Bondurant, Eugene D.	May, Frank H.
Bowman, James L.	May, William L.
Brindley, Thaddeus B.	Mayfield, Surry F.
Brooks, Osceola J.	McCain, William J.
Brown, James M.	McCall, Daniel T.
Buchanan, John P.	McGhee, Moses
Burns, William A.	McInnis, William R.
Caine, Vaughn H.	McLean, James N.
Carpenter, James A.	Mohr, Charles A.
Chalker, Benjamin C.	Moore, George A.
Cheney, Henry W.	Moore, William W.
Chisolm, Robert P.	Murphy, Charles M.
Cobb, William F.	Nichols, Cobb
Dedman, James E.	Parnell, Charles N.
Dickey, Edwin W.	Patton, Madison Knox
Dowdy, Robert W.	Peacock, Lovick E.
Edwards, Daniel B.	Prather, Robert C.
Embry, Jerre C.	Pugh, John T.
Faulk, William M.	Ransom, William W.
Fitts, Alston	Robinson, Cornelius B.
Fleming, John C.	Ryals, William M.
Ford, Julian C.	Sanders, William B.
Fox, Bertram A.	Savage, Victor
Gaines, Toulmin	Scales, John P.
Gaines, William D.	Scales, Willis W.
Gordon, Samuel A.	Schoolar, Thornley E.
Guice, Charles Lee	Self, George W.
Hagler, Prewitt L.	Sellers, Ira J.
Hagood, John W.	Shaw, Robert E.
Haigler, James R.	Smothers, R. E. L.
Hail, Richard A.	Snoddy, Ephraim
Hale, Prior	Sowell, James L.
Ham, Nelson M.	Stabler, Lorenzo V.
Hamner, Harper T.	Stallworth, Emmett L.
Hamrick, Robert H.	Stanley, Robert H.
Harris, Esau A.	Stephens, B. A.
Harris, Seale	Stevenson, Forney C.
Harrison, K. W.	Stuart, William W.
Harrison, W. Groce	Swann, Joseph C.
Hayes, Julius P.	Tatum, Samuel C.
Heacock, Joseph D.	Thigpen, Charles A.
Heflin, Wyatt	Thorington, Chilton
Hill, Robert S.	Tippin, P. H. M.
Hilt, John L.	Waldrep, Archie C.
Hodgson, Philip M.	Waldrop, R. W.
Hogan, George A.	Wallace, George O.
Hough, James Spencer	Ward, Henry Silas
Howard, Percy John	Whiteside, John M.
Howle, James A.	Wilkinson, David L.
Inge, James T.	Williamson, Edwin O.
Johnston, Hardee	Wilson, Cunningham
Jordan, David C.	Wood, James W.
Jordan, Joseph Wiley	Wren, Edward B.
Jordan, William M.	Wynn, Andrew Lee
Kenan, James	Yarbrough, John F.

Kennedy, Jacob J.
Kirk, Arthur A.
Kirkpatrick, Milton B.

Young, James D.
Zimmerman, Albert S.

The Jerome Cochran Lecture was delivered by Dr. Andrew C. Ivy, Vice-President, Chicago Professional Colleges, University of Illinois, his subject being The Gallbladder in Health and Disease.

Miscellaneous Business

The Secretary of the Association announced vacancies as follows in the College of Counsellors:

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

1st Congressional District—1. Dr. W. S. Chapman is deceased.

2nd Congressional District—2. Douglas L. Cannon is to be elevated to Life Counsellor. W. R. Carter's second term of seven years has expired.

3rd Congressional District—4. F. G. Granger is to be elevated to Life Counsellor. C. T. Jones's first term of seven years has expired. Dr. W. Hill McCaslan is deceased. G. R. Smith's second term of seven years has expired.

4th Congressional District—3. The second terms of seven years of J. F. Alison and W. M. Salter have expired. Dr. James Tankersley is deceased.

6th Congressional District—2. M. H. Eskew's second term of seven years has expired. W. J. B. Owing's first term of seven years has expired.

7th Congressional District—1. M. S. Whiteside's first term of seven years has expired.

8th Congressional District—2. The first terms of seven years of J. C. Bragg and A. M. Roan have expired.

9th Congressional District—3. The first term of seven years of R. E. Cloud has expired. Drs. D. S. Moore, Jr., and Oliver W. Welch are deceased.

**Afternoon Session, Friday, April 16
2:00 P. M.**

Dr. Louis T. Byars, Assistant Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo., read a paper entitled Common Problems in Plastic Surgery.

Dr. Frank E. Whitacre, Professor of Obstetrics and Gynecology, University of Tennessee College of Medicine, Memphis, discussed the Diagnosis of Ectopic Pregnancy.

Dr. Edwin C. Ernst, President, American College of Radiology, Barnard Free Skin and Cancer Hospital and De Paul Hospital, St. Louis, Mo., dealt with the Management of the Treatment of Cancer of the Cervix.

The subject Modern Methods in the Diagnosis and Treatment of Mediastinal Masses was handled by Dr. Osler A. Abbott, Division of Chest Surgery, Emory University Medical School, Atlanta.

From 4:00 to 5:45 P. M., the Association engaged in a visit to Bellingrath Gardens, followed by an outdoor sea food supper at the Wagon Wheel, week-end home of Dr. and Mrs. J. U. Reaves.

Friday Evening, April 16
8:00 P. M.

The paper of Dr. Grady O. Segrest, Mobile, on Diabetes in Relation to Other Medical Problems was read by Dr. Samuel Eichold, Mobile.

Dr. John S. La Due, Pack Medical Group, Memorial Cancer Hospital, New York, presented a paper on the Diagnosis and Treatment of Tumors of the Lymphoid System.

Atomic Energy in Its Relation to Biological Problems was discussed by Dr. Alexander Hollaender, Biological Division, Oak Ridge National Laboratory, Oak Ridge, Tenn.

Dr. Champ Lyons, Department of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, read a paper on Treatment of Peritonitis, with Especial Consideration of Chemotherapy.

The evening's program was followed by entertainment, a courtesy of the Mobile County Medical Society.

(To be concluded in the June Journal)

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.
State Health Officer

THE CAUSES AND CURE OF BACKACHE

Have you ever leaned over to pick up something and been struck by a sudden, stabbing pain in the back? Or have you ever decided that your desk needed moving just a little bit? And, when you started lifting, you had to drop it in a hurry and start rubbing your back?

If so—and most of us have done approximately these same things, with the same result—you are a full-fledged member of the great brotherhood of backache victims. Those who know the condition from past as well as present experience make it one of the largest group of Americans ever to have a single thing in common. For backache is a well-nigh universal pain.

But it can and does mean extra work and expense, as well as pain for others, as well as for you. Suppose you lean over improperly or strain too much while on the job. You may not be able to work for a day or two or longer. That will cost you or your firm money. It will place additional work upon your fellow workers. You will have to fill out complicated forms to be sent to the proper officials and agencies. There may be some to go to your union. Others may have to be sent to the insurance company.

Still others may have to go to the agency handling compensation for industrial accidents. For claims of that kind cannot be collected over the telephone. After you carefully fill out these forms, somebody else must take time to study them. Then they must go on to other officials and employees. All of those steps cost time and money. That adds to your burdens and troubles. It also adds to taxes.

Ailments of this kind are likely to become more time-consuming as time goes on, also more expensive to all of us. Robert D. Potter told about this aspect of the backache problem when he wrote recently in *Hygeia*: "Indeed, the more the labor force of the nation becomes organized and unionized, the more the government—either state or nation—looks after the welfare of the individual from birth to death, the more important become backaches and backache examinations."

Mr. Potter described a typical case of this kind: A workman, whom he called John Jones, works for A Company. Then he shifts to B Company. After a while he shifts again. This time he takes a job with C Company. And then he develops a backache.

Which firm should be held responsible for it? (We are assuming of course that it was due to his work.) Did he have to do some lifting on his first job that he shouldn't have done? Or did B Company assign him

to work that called for too much leaning over? Or was he all right, as far as his back was concerned, when he went to work for C Company? Or—this may have happened—did the strain or leaning over occur before he started working for A Company even? Was the seed of his trouble planted years ago? Could he have tried to do too much when he was doing odd jobs after school?

If you take a job with the Federal government, you have to undergo a pretty rigid physical examination. It's not as rigid as those given to future GI's in wartime. But, if there's anything much wrong with you, it will be shown up. If your eyes have been giving you trouble when you'd try to read, the doctor will tell why. And he will advise you to go to see your oculist. If he finds bad teeth, he'll tell you to see your dentist as soon as you can. If the urinalysis shows that there is something wrong with your kidneys, he'll tell you what it is and tell you to be treated. And, when you have finished your examination, he'll give you a report. It will tell your prospective official superior what is wrong with you, if anything. If it shows certain things wrong, he'll tell you he's sorry but you can't work for the government. If you have certain other defects, he'll tell you to get them corrected and then report for work. Or he may tell you you are all right for certain kinds of work but not for others. A man who could not qualify physically for hard labor could probably do desk work. Or he probably could stand up under light physical labor. One whose eyes, in spite of glasses, won't permit him to read eight hours a day might safely do interviewing or social service work. The government's idea of course is to put the right man on the right job. It's also to save the taxpayers money. If it can prevent someone from taking a job that would aggravate a physical defect, it can prevent him from establishing a claim for disability. And such claims cost money. They cost millions of dollars when multiplied by thousands of cases.

The Federal government is not alone in giving such examinations. Big business has found it is good business. And now it is being suggested that labor unions do that. It has been called especially advisable for unions whose members do heavy physical

labor. That would seem to be a normal union responsibility. For unions are responsible for supplying factories, shops, etc. with men and women properly qualified by training or experience to do the work they are expected to do. So why should they not assume this additional responsibility? Why not obligate themselves not to send a physical weakling to fill a job calling for brawn and lots of it?

Those who suggest such screening by unions are thinking in terms of disease generally, of course. But it would be especially helpful to victims of early-stage backache. Businesses prevented from hiring such people would be greatly helped too. And all of us would benefit. For savings made all along the line would mean greater personal efficiency and lower prices.

This suggestion has been made by many persons. No one can claim exclusive right to it. But one of the most enthusiastic supporters of the plan is Dr. Steele F. Stewart. He is a member of the Medical Group, in Honolulu, and has special reason to express strong convictions on the subject: For he has made a pretty thorough-going study of backaches among stevedores. This type of laborer offers a particularly attractive target for such a study. For stevedores spend practically all their working lives lifting heavy articles. So they have lots of experience with backache. In fact they probably have more than any other group of the population of comparable size. That study made Dr. Stewart a backache expert of considerable standing. Nor is his knowledge of backaches confined to what he has learned from burly, bearded men sweating under heavy loads on ships and piers. He has also studied them among the rest of us.

Backaches are of many kinds. And the pain they cause Mr. A may differ widely from the kind they cause Mr. B. And Mr. B's pain may not be like that suffered by anybody else in his plant. But, in general, all backaches fall into four kinds: First, there is that caused by some disease primarily affecting some other part of the body. This kind of backache produces a form of suffering called "referred pain." The gallbladder for example causes a great many more backaches than most of us have any idea. The prostate gland can cause lots of suffering of this kind too. And of course

most mothers—or many of them—remember the severe backaches they suffered before their babies came.

The second type of backache is known as the "traumatic" type. That means only that it is due to some form of injury or accident. If you go horseback riding after you have been away from horses a long time, you experience pain. But that is not traumatic backache. It strikes you all over your body. Or at least you feel a sharp twinge of pain whenever you use a muscle that you have strained by your horseback riding. The muscle's protest takes the form of pain and soreness. But, as already pointed out, that is different from traumatic backache. About the only way you could get traumatic backache from horseback riding would be to fall off the horse and hurt yourself. Much more likely falls for most of us are those from stepladders or down the steps. Other kinds of accidents can cause traumatic backache too, remember: They don't have to be falls. Something heavy can fall on you. Or you can be hurt in an automobile accident. Anything like that can give you traumatic backache.

Third, there's "atraumatic" backache. This is the kind you have without having an accident. You may have this kind when you've been doing work that Mr. Potter calls "heavy, monotonous and repetitive." People have this kind more often than any other. When you do so, you don't feel a sudden pain in your back while you're in the middle of a heavy lifting job. It's the kind of ache that you get after weeks or months of doing your day-to-day work without once wondering if you are hurting yourself. Stenographers sit rigidly at their typewriters day after day, hodcarriers keep brickmasons busy, clerks stand in one position for hours at a time, housewives spend hours at a stretch over their stoves while they cook their families three-meals-a-day, nurses, pharmacists and chauffeurs do the same things hour after hour. These and many others find themselves at last the victims of atraumatic backache.

The fourth and last kind that you can have—and that many people do have—is what the doctors call "psychosomatic backache." We develop that kind when we have what Mr. Potter calls "some unresolved mental situation." When you have such situations

without being able to do anything about them, you may begin to experience actual physical pain in your back. This does not mean, however, that you or anybody else will always experience this kind of reaction to such emotional conditions. Some people react in one way, some in others. Some will suffer migraine headaches. (Remember those the heroines of mid-Victorian novels used to experience when they found their husbands not faithful or their lovers paying court to other ladies?) Many people in this hustle-and-bustle age develop stomach ulcers. Others develop other physical symptoms for this purely mental condition. They include many who have pains in the lower back.

Let us consider for a moment what you and the doctor can do to prevent and cure these four types of backache:

When you have the kind that you or your doctor knows to belong to the No. 1 category, the "referred pain" type, you should cure it in the same way that you would any other kind of disease due to a specific cause: You simply remove the cause. You certainly cannot hope to obtain any permanent relief until you do that.

For No. 2 backaches (the kind you get from accidents) you can do nothing much after you get it, except to relieve the pain and treat the injury. Then, in time, nature will probably give you permanent relief. But there is something you can do to protect yourself against having this kind in the first place. You can be extraordinarily careful while you are at work and at play. You can enlist the cooperation of your employers and friends in a general program of accident prevention. Remember: if you cut down accidents, you cut down the chance that you will have backache.

We can control our own and other people's susceptibility to the No. 3 type of backache by changing our work habits. (We get this kind, remember, by performing "heavy, monotonous and repetitive tasks.") This means, for one thing, that we shall have fewer backaches of this kind if we protect ourselves as much as we can from fatigue. If we are doing work or engaging in sports to which we are not accustomed, we can take things easy. We can stop for rest. We can develop the excellent habit of "letting down" physically and emotionally. We can step to

an open window and get a breath of fresh air whenever we begin to feel dopey and tired. We can prevent fatigue in another way too: We can avoid working for long stretches at a time in a strained, cramped position. It means, in the second place, that we can protect ourselves against sudden changes in environment, such as working first in a hot and then in a cold room. In the third place, we can be sure we take enough salt into our systems to replace that lost by perspiration. And finally, we can avoid placing our bodies into positions to which they are not accustomed.

We can avoid backache, then, by watching out for little things, as well as big things. If we are careful, we can save ourselves and our doctors lots of trouble and work.

BUREAU OF LABORATORIES

H. P. Sawyer, M. D., Director

SPECIMENS EXAMINED

FEBRUARY 1948

Examinations for diphtheria bacilli and Vincent's	254
Agglutination tests (typhoid, Brill's and undulant fever)	764
Typhoid cultures (blood, feces and urine)	596
Examinations for malaria	358
Examinations for intestinal parasites	3,157
Serologic tests for syphilis (blood and spinal fluid)	26,755
Darkfield examinations	14
Examinations for gonococci	2,441
Examinations for tubercle bacilli	2,326
Examinations for meningococci	8
Examinations for Negri bodies (microscopic)	107
Water examinations	1,217
Milk and dairy products examinations	2,733
Miscellaneous	622
Total	41,352

It will be noted that families with an income below \$1,000 per year have nearly four times as much disability from tuberculosis, nearly three times as much disability from orthopedic impairments, and approximately twice as much diseases, and nervous diseases as families with incomes over \$5,000. For relief families, the ratio rises to nearly ninefold for tuberculosis, and fourfold for orthopedic impairments, between threefold and fourfold for rheumatism and digestive diseases. Considering all causes of disability together, the group with incomes under \$1,000 shows 66 per cent more disability and the relief group shows 155 per cent more than the families with incomes over \$5,000.—C. E. A. Winslow, D. Sc., *Am. J. Pub. Health*, Jan., 1948.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1948

	Jan.	Feb.	*E.E. Feb.
Typhoid	0	0	4
Typhus	7	1	20
Malaria	12	11	49
Smallpox	0	0	1
Measles	47	346	486
Scarlet fever	88	47	76
Whooping cough	135	157	81
Diphtheria	35	19	33
Influenza	2561	2051	1313
Mumps	79	93	206
Poliomyelitis	3	5	2
Encephalitis	0	3	1
Chickenpox	228	186	132
Tetanus	1	6	2
Tuberculosis	178	168	206
Pellagra	1	2	4
Meningitis	9	16	14
Pneumonia	580	494	584
Syphilis	1439	1820	1424
Chaneroid	11	20	12
Gonorrhea	563	441	483
Tularemia	2	1	2
Undulant fever	6	1	3
Amebic dysentery	2	4	0
Cancer	222	253	0
Rabies—Human cases	0	0	0
Positive animal heads	28	33	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

THE COLLECTION, INTERPRETATION AND SIGNIFICANCE OF THE RESULTS OF BACTERIOLOGIC EXAMINATION OF SAMPLES FROM PRIVATE WATER SUPPLIES

Contributed by

J. L. Crockett, Jr., B. S. & M. S.
Senior San. and Pub. Health Eng.

A surprisingly large number of samples of water from private or family water supplies are received by the State Health Department for bacteriologic examination. Quite a number of these samples are collected without thought being given to contamination of the sample during collection and many of them are shipped to the laboratory in whatever container is readily available. To many persons submitting samples for examination the significance of the report is not clear. It is the purpose of this article to present as clearly as possible the procedure for collection of water samples and a discussion of the interpretation and significance of the results of bacteriologic examination.

Sterilized bottles for the collection of water samples can be obtained from the County Health Department. These bottles are packed in shipping containers with an

identification card and instructions for collecting the sample. If samples are collected in bottles other than those obtainable from the Health Department, they will be discarded by the laboratory as examination of the water would be completely misleading.

The sample bottle must be kept sterile, and care should be taken to avoid touching the inside of the cap or the inside or outside of the neck and lips of the bottle. Do not remove the bottle cap until ready to collect the sample. Hold the cap in one hand with the inside pointing downward, fill the bottle completely and quickly fasten the cap on the bottle and place it in the shipping container. The date of collection, name and address of the collector, and source of the supply should be clearly shown on the identification card and the card placed in the container with the bottle. The shipping container should be mailed by parcel post to the nearest one of the laboratories of the State Health Department.

It is rarely the case that the mouths of hydrants or pumps do not have bacteria on them and in taking a sample from these sources bacteria will more than likely be carried into the container by the velocity of the water. Since it is the object to sample the water and not the spigot or pump, bacteria clinging to these surfaces should be removed. This can be accomplished by flaming the spigot or mouth of the pump thoroughly with a torch made of paper or other suitable material. The sample bottle should be filled directly from the spigot or pump and not from a cup or bucket or through a funnel.

If the source to be sampled is a spring, the sample should be taken at least six inches below the surface to avoid inclusion of material that may be floating on the surface. The proper procedure is to tie a string securely around the lower part of the bottle neck, remove the cap and lower the bottle into the water and raise it rapidly so as to get as little surface water as possible.

As it is practically impossible to determine whether or not disease causing bacteria are present in water, the laboratory technician looks for a group of bacteria whose habits follow closely those of bacteria causing disease. These bacteria are the coli-aerogenes group and are found in the digestive tract of all warm blooded animals and their pres-

ence is an indication that the typhoid and dysentery bacteria may find an entrance to the water supply.

When the water sample is received by the laboratory, slightly less than one third ounce of the water is placed in each of three tubes containing a food substance for coli-aerogenes bacteria while about one thirtieth of an ounce of the sample will be added to a fourth bottle of bacteria food. After sufficient time has elapsed the four tubes will be examined. If gas is present in the tube or tubes it is evidence that the water contained bacteria.

The report of bacteriologic examination is sent to the person for whom the sample was collected on a standard form. In the lower part of this form there are two lines on which the results are shown. One of these lines is for the three tubes containing about one third of an ounce each of the sample and the other for the tube containing a much smaller amount. If no bacteria were present in the water, the word "negative" will appear on these lines. Should the report read "one positive" on the three ten cc. sample line and "negative" on the one cc. line, only a few bacteria were present and the report would be considered satisfactory. If the report shows that more than one of the ten cc. samples or the one cc. sample was positive, bacteria are present in sufficient numbers to throw suspicion on the quality of the water and its fitness for drinking would be questionable.

As previously stated bacteriologic examination of water is only an indication of the possibility of harmful bacteria entering the supply. Since it is possible for a well or spring to test satisfactorily at one time and a little later show evidence of contamination, too much dependence cannot be placed on the bacteriologic examination alone. Knowledge of the source of the water and degree to which it is protected from surface contamination is necessary to interpret the significance of a bacteriologic report. A report showing no bacteria would be misleading if there were a chance of surface water entering the supply and the submission of samples from such sources is, as a matter of fact, a waste of time. Information concerning the protection of private water supplies can be obtained from the County Health Department.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL VITAL STATISTICS SUMMARY

For the second consecutive year the birth rate has reached a new high. There were 85,893 births registered in Alabama during 1947, making a rate of 28.3 live births for each thousand of the population. According to national reports, the baby boom has reached unprecedented proportions not only in Alabama but increases have been noted in the birth rates of all states. The high birth rates are associated with a great increase in the number of marriages during 1945 and 1946. Since the 1947 marriage rate was lower than that for the previous year it is quite likely that 1948 will begin a leveling-off period if not an abrupt recession in the spectacular rise in birth rates. Marriage and birth rates have not only reflected a return of young men from military service but have also been stimulated by a state of continued general prosperity.

During a period of rising birth rates the infant mortality rate appears favorable and the 1947 rate of 37.7 per 1,000 live births is no exception. A more reliable indicator is seen in the neonatal rate which stands at 26.5 per 1,000 live births. Mortality in the first month of life is still a leading contributor to the total death rate and is responsible for the more than two-thirds of all deaths among babies less than one year old. Deaths associated with child-bearing remained low in 1947 in spite of the unprecedented number of births. This is a great accomplishment and the benefits of prenatal and postnatal care are reflected in the relatively low maternal mortality rate of 25.2 per 10,000 total births. The complete picture cannot be shown until final tabulations are made by race.

The accompanying table shows the trend in mortality statistics. The 25,833 deaths which occurred in Alabama during 1947 resulted in a crude rate of 8.5 per 1,000 population. This is slightly higher than the 1946 rate but the increase is not significant. It is to be expected that crude mortality

This summary contains provisional statistics for 1947 and comparable tabulations for 1946 and a five-year average. Natality and mortality statistics by residence, race, sex and age will be available at a later date.

rates will rise with an increasing proportion of older individuals. In spite of the high birth rate the aged group is growing faster than the total population. Thus it is typical that an ever increasing number of deaths are due to the so-called degenerative diseases. Of the total number of deaths that were recorded during 1947, 12,799, nearly one-half, were attributed to heart diseases, intracranial lesions, cancer and nephritis. These four killers continue to present a perplexing problem because so little can be done to combat them except through intensified efforts at early detection and treatment.

Although whooping cough is now preventable there were 117 deaths attributed to that juvenile disease last year and, aside from tuberculosis, it ranked second to influenza as the main cause of death in the communicable disease category. However, there were fewer deaths attributed to influenza last year than during 1946 while deaths from whooping cough increased three-fold. Declining death rates from many communicable diseases reflect the control work and DDT spraying that have been carried on. The major emphasis in medicine and public health is directed at preventing early death from disease. The increased average life span is conclusive evidence of achievements in postponing death from disease.

Deaths from tuberculosis show a slight increase over 1946 and there is good reason to be concerned about this disease. It is probable that more cases are detected and reported than heretofore. We are now bringing tuberculosis out into the open through mass x-ray projects. Early diagnosis and treatment will no doubt lower mortality from tuberculosis.

Most accidents can be prevented. There were 1,891 accidental deaths reported in 1947, a decrease from the previous year. Deaths associated with automobiles totaled 704, also a decrease from the previous year. In the face of increased auto mileage the decreased accidental death rate must be attributed to better traffic management and safety precautions.

The summary shows that a number of diseases have registered declines although mortality conditions reflected by the crude death rate of 8.5 per 1,000 population were not as favorable as they were during 1946. Comparison with the crude average annual

death rate covering the preceding five years shows a noticeable improvement. The favorable trends of mortality from many infectious diseases and diseases incidental to childbearing contrast sharply with the ex-

perience for diseases of middle and later life. When allowance is made for the effect of a changing age distribution, the mortality experience for 1947 may well be the best on record.

VITAL STATISTICS TRENDS

Births, Stillbirths, and Causes of Death	Number Registered			Rate*		
	Provi- sional 1947	Final 1946	Average 1942-1946	Provi- sional 1947	Final 1946	Average 1942-1946
Births, exclusive of stillbirths	85893	78966	74965	28.3	26.3	25.9
Stillbirths	2501	2295	2285	28.3	28.2	29.6
Deaths exclusive of stillbirths	25833	24491	25739	8.5	8.2	8.9
Infant deaths:						
under one year	3235	2975	3312	37.7	37.7	44.2
under one month	2271	2106	2062	26.5	26.7	27.5
Typhoid and paratyphoid 1, 2	6	10	14	0.2	0.3	0.5
Epidemic cerebrospinal meningitis 6	27	33	52	0.9	1.1	1.8
Scarlet fever 8	2	1	2	0.1		0.1
Whooping cough 9	117	38	89	3.9	1.3	3.1
Diphtheria 10	30	29	46	1.0	1.0	1.6
Tuberculosis, all forms 13-22	1116	1098	1228	36.8	36.6	42.4
Malaria 28	18	31	52	0.6	1.0	1.8
Syphilis 30	314	332	380	10.3	11.1	13.1
Influenza 33	313	410	503	10.3	13.7	17.4
Measles 35	25	47	37	0.8	1.6	1.3
Poliomyelitis 36	8	21	16	0.3	0.7	0.6
Encephalitis 37	14	8	12	0.5	0.3	0.4
Typhus fever 39	16	22	33	0.5	0.7	1.1
Cancer, all forms 45-55	2327	2245	2051	76.7	74.8	70.9
Diabetes mellitus 61	359	345	353	11.8	11.5	12.2
Pellagra 69	85	94	119	2.8	3.1	4.1
Alcoholism 77	31	32	30	1.0	1.1	1.0
Intracranial lesions 83	2618	2359	2356	86.3	78.6	81.4
Diseases of the heart 90-95	5920	5310	5103	195.1	176.7	176.3
Diseases of the arteries 96-99	287	268	287	9.5	8.9	9.9
Bronchitis 106	55	51	42	1.8	1.7	1.5
Pneumonia, all forms 107-109	1165	1114	1375	38.4	37.1	47.5
Diarrhea and enteritis, under 2 years 119	100	122	240	3.3	4.1	8.3
Diarrhea and enteritis, 2 years and over 120	60	46	73	2.0	1.5	2.5
Appendicitis 121	107	120	163	3.5	4.0	5.6
Hernia and intestinal obstruction 122	204	177	190	6.7	5.9	6.6
Cirrhosis of the liver 124	148	135	124	4.9	4.5	4.3
Nephritis, all forms 130-132	1934	1911	2084	63.7	63.6	72.0
Diseases of puerperal state 140-150	223	201	262	25.2	24.7	33.9
Puerperal septicemia, 140, 142a, 147	43	67	81	4.9	8.2	10.5
Suicide 163, 164	206	211	173	6.8	7.0	6.0
Homocide 165-168	457	424	358	15.1	14.1	12.4
Accidents, all types 169-195	1891	1922	1945	62.3	64.0	67.2
Motor vehicle accidents 170	704	755	592	23.2	25.1	20.5
All other known causes	4079	3826	3380	134.4	127.4	116.8
Ill-defined and unknown causes 199,200	1571	1498	1894	51.8	49.9	65.4

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); deaths from specified causes per 100,000 population; deaths from puerperal causes per 10,000 total births.

PROVISIONAL MORTALITY STATISTICS

REPORTED NUMBER OF BIRTHS, STILLBIRTHS AND DEATHS FROM CERTAIN IMPORTANT CAUSES FOR DECEMBER 1947, AND COMPARATIVE RATES FOR 1947, 1946 AND 1945

Births, Stillbirths, and Causes of Death	Number Registered During Dec. 1947			Rate* (Annual Basis)		
	Total	White	Colored	1947	1946	1945
Births, exclusive of stillbirths	7243	**	**	28.4	31.4	23.5
Stillbirths	197	**	**	26.5	32.4	30.0
Deaths, exclusive of stillbirths	2509	1414	1095	9.8	8.5	10.2
Infant deaths:						
under one year	333	157	176	46.0	37.9	45.5
under one month	217	114	103	30.0	27.0	28.3
Typhoid and paratyphoid 1, 2					0.8	0.4
Epidemic cerebrospinal meningitis 6	4	2	2	1.6	0.8	2.0
Whooping cough 9	11	6	5	4.3	3.1	1.2
Diphtheria 10	6	5	1	2.4	2.4	5.1
Tuberculosis, all forms 13-22	93	39	54	36.5	32.6	37.2
Malaria 28	2	1	1	0.8		0.8
Syphilis 30	31	2	29	12.2	11.4	15.8
Influenza 33	18	11	7	7.1	12.2	36.4
Measles 35					0.8	0.4
Poliomyelitis 36	1	1		0.4	0.4	0.4
Encephalitis 37	2	2		0.8		0.4
Typhus fever 39					1.2	
Cancer, all forms 45-55	186	135	51	72.9	76.5	79.6
Diabetes mellitus 61	33	21	12	12.9	18.4	14.7
Pellagra 69	5	4	1	2.0	3.1	4.8
Alcoholism 77	5	3	2	2.0	0.8	0.8
Intracranial lesions 83	262	144	118	102.8	82.4	104.2
Diseases of the heart 90-95	605	393	212	237.3	186.3	208.4
Diseases of the arteries 96-99	38	28	10	14.9	9.0	13.9
Bronchitis 106	5	4	1	2.0	1.6	1.6
Pneumonia, all forms 107-109	160	76	84	62.8	40.4	65.8
Diarrhea and enteritis (under 2 years) 119	5	2	3	2.0	3.9	3.6
Diarrhea and enteritis (2 and over) 120	4	3	1	1.6	1.2	1.6
Appendicitis 121	5	4	1	2.0	4.7	4.8
Hernia and intestinal obstruction 122	17	10	7	6.7	5.1	5.9
Cirrhosis of the liver 124	9	7	2	3.4	5.5	5.5
Nephritis, all forms 130-132	164	73	91	64.3	59.2	65.0
Diseases of puerperal state 140-150	15	5	10	20.2	22.9	26.1
Puerperal septicemia 140, 142a, 147	2	2		2.7	8.5	11.4
Suicide 163, 164	22	21	1	8.6	6.3	6.3
Homocide 165-168	29	13	16	11.4	16.1	7.9
Accidents, all types 169-195	208	131	77	81.6	64.3	86.4
Motor vehicle accidents, 170	76	47	29	29.8	23.9	31.3
All other known causes	375	213	162	147.1	139.2	146.2
Ill-defined and unknown causes 199,200	189	55	134	74.1	58.0	83.2

*Birth and death rates per 1,000 population; infant death rate per 1,000 live births; stillbirths per 1,000 total births (inclusive of stillbirths); from specified causes per 100,000 population; from puerperal causes per 10,000 total births. All rates are based upon the December report of the years specified.

**Not available.

THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 17

June 1948

No. 12

THE CLINICAL PICTURE OF AURICULAR FIBRILLATION

CLARENCE K. WEIL, M. D.

Montgomery, Alabama

DEFINITION

Auricular fibrillation is a disturbance in the neuromuscular mechanism of the heart in which the rhythmic contractions of the auricles are replaced by a continuous fibrillary twitching of their musculature and the efficient emptying of the auricles is replaced by a continuous flow of blood into the auricles and, during diastole, into the ventricles. The contraction of the ventricles occurs in a normal manner but the rhythm is irregular.

PATHOLOGICAL PHYSIOLOGY

Diagnosis is usually made by palpation of the pulse, but at times it is necessary to check one's impressions by auscultation of the heart and by electrocardiogram. The degree of irregularity varies considerably. When the rate is slow, the difference between two successive pairs of ventricular contractions may be as much as 0.6 seconds, a time interval readily appreciated by the palpating finger. On the other hand, when the rate is rapid, say 150 per minute, and the interval between contractions is somewhere in the neighborhood of 0.4 seconds, the difference in the time interval of two successive pairs of ventricular contractions may be less than 0.1 seconds, an interval so short that it is not easily detected by the palpating finger, the listening ear, or even the eye studying an electrocardiogram. Often one must measure several intervals with calipers

before one realizes that no two intervals between systoles are exactly the same.

In the normal heart, during diastole, blood flows into the auricles and through the open auriculoventricular valves into the ventricles. When the ventricles are almost full the auricles contract, filling the ventricles completely and slightly stretching the musculature of the ventricular wall. This results in a very efficient emptying of the ventricles and a maximum cardiac output. In fibrillation, the auricles remain constantly full and blood pours into the ventricles whenever the interventricular pressure is less than that within the auricles. Only the final overfilling of the auricles is lost. The decrease in output may be only slight and the interference with cardiac efficiency may be small. The actual effect upon the circulation is more dependent upon the rate of contraction of the ventricles than upon any other factor. When the rate is slow, circulatory efficiency approaches what it was before fibrillation occurred. When the rate is rapid, many ventricular contractions are so inefficient that the output of blood is small. It is in the presence of rapid rates that circulatory failure is likely to be brought about or exaggerated as a result of the onset of fibrillation.

In the presence of auricular fibrillation, blood pressure findings are distinctive. As the pressure within the cuff is released, an occasional beat comes through at a pressure of say 175. As the pressure is reduced further, more and more of the beats come

Read before the Association in annual session, Mobile, April 15, 1948.

Dr. Weil died on May 5, 1948.

through until, at say 150, all beats are heard. As the pressure drops within the cuff to perhaps 120, some of the sounds are not audible and, with a further drop, more and more of the sounds are lost until, at a pressure of say 90, they fade out entirely. Such a pressure can be expressed as follows: 175-150/120-90. Those contractions which produce the highest systolic pressure produce also the lowest diastolic pressure, and, on the contrary, those with the lowest systolic have the highest diastolic pressure. Thus the pulse pressure of different systoles in the case illustrated would vary from 85 mm. to 30 mm. When the pulse pressure of some of the contractions falls to a low enough level, pulsation cannot be felt by the examining finger on the radial pulse. The difference in the rate of the heart and that of the radial pulse is known as a pulse deficit.

In the absence of auricular contractions, blood tends to stagnate in those parts of the auricle which are not in the direct path of the blood flow, especially in the auricular appendages. There, the stagnant blood often clots, and the clot either lies free in the auricular cavity where it may suddenly block the auriculoventricular opening with sudden death, or it may remain attached to the wall of the auricle as a mural thrombus, from which small pieces may be thrown into the circulation and lodge in the lung, the extremities, or some abdominal organ. The frequency of this complication in 684 reported cases was 3.5%.

AGE OF ONSET

Fibrillation may begin at any age. The youngest reported case was in an infant three months of age. Of the reported cases, only 0.5% occurred before the age of ten, 4.2% between ten and twenty years. The majority were over forty at the time of onset. Our youngest patient was ten years old when fibrillation began and our oldest was eighty-four.

ETIOLOGY

In some patients with fibrillation, no evidence of heart disease can be demonstrated. This was true in the case of the three-month old infant. Fibrillation lasted nine months and stopped spontaneously. The child has remained well since. Two of our patients started to fibrillate at sixteen and seventeen

years of age. One of these patients is now sixty-nine and the other seventy-four years of age and they are still fibrillating. No etiologic factor can be found to account for their fibrillation and no evidence of heart disease can be demonstrated on examination.

Of our patients, only four others began before the age of forty. Three of these had rheumatic heart disease while one had luetic aortitis. This is in keeping with other clinical reports in which most of the cases under forty are due to rheumatic fever. Of patients with rheumatic fever, about one out of forty have fibrillation as a complication. This was the incidence of 864 reported cases.

After forty, arteriosclerosis with hypertension, with or without coronary sclerosis, is the most frequent cause of fibrillation. Twenty-four of our patients began to fibrillate after the age of forty and all of these had some degree of arteriosclerosis, but in two of them there was some factor other than arteriosclerosis contributing to the fibrillation. One patient with a blood pressure of 200/100 had a history of rheumatic fever in young manhood with resulting valvular damage. A woman in her seventies with hypertension had a severe thyrotoxicosis due to self medication. Most of these patients had very large hearts and we are impressed with the relationship of extreme hypertrophy from any cause to the onset of fibrillation. Four of our older patients had extreme degrees of dorsal scoliosis and it is possible that this may have contributed to the cardiac strain. In other parts of the country, thyrotoxicosis would undoubtedly play a larger part in the production of fibrillation. In only one of our cases did fibrillation begin immediately after the occurrence of a coronary infarct.

DURATION OF THE FIBRILLATION

Untreated, fibrillation may last a few days or many years. It may occur once or it may occur dozens of times during the life of a patient. One of our patients had two electrocardiograms taken in succession, the first lying down, the second sitting up. The first showed sinus rhythm; the second, auricular fibrillation. He has continued for five years to alternate between fibrillation and sinus rhythm. Another patient of seventy-four has had fibrillation five times in two years, the longest attack lasting only

thirty-six hours. One patient has fibrillated for fifty-seven years continuously.

SYMPTOMS

The symptoms of fibrillation are extremely variable. Some patients have no symptoms whatsoever. They cannot tell whether they are fibrillating or not. Other patients are acutely aware of the onset of fibrillation. Symptoms when present may be of two types: those accompanying a slow ventricular rate and those accompanying a rapid ventricular rate.

When the pulse is slow, the symptoms are due to the cardiac irregularity. They consist of heart consciousness, giddiness, dizziness, sighing respiration and faintness. These symptoms are a handicap in certain kinds of work. Masters felt that they unfit a man for naval combat duty, flying a plane or running a locomotive. I might add that they make a man unfit to drive a car at fifty miles an hour or to work on a ladder or other high places.

Rapid fibrillation frequently results in cardiac failure even when the heart is normal. Brill reported a case of congestive failure brought on by fibrillation in a normal heart. After restoration to sinus rhythm there was no further evidence of heart failure and the heart was normal in every way. In some patients with diseased heart, the onset of fibrillation marks the beginning of congestive failure. In other patients, who already show evidence of heart failure, fibrillation does not increase the degree of failure. In many of these, the fibrillation persists while the degree of congestive failure improves or regresses as a result of other factors such as rest, digitalis, or intercurrent infections. In patients with a moderate to marked degree of coronary sclerosis, fibrillation may bring on symptoms of angina pectoris.

COMPLICATIONS

Embolism is the most frequently encountered complication of fibrillation. It may occur in the lung, the brain, the abdominal organs or the peripheral arteries. One of our patients had a cerebral embolus with hemiplegia. He had not been conscious of his fibrillation prior to this accident and had no other symptoms referable to the fibrillation during a year's observation following the embolism. Two patients had pulmonary

emboli and one a splenic embolus but these accidents did not influence the outcome of these cases. One patient had an embolus to the right external iliac artery with complete obliteration of the femoral circulation. She died a week later as a result of her cardiac failure.

ASSOCIATION WITH OTHER IRREGULARITIES

In half of our cases, extra-systoles were encountered either before or after the onset of fibrillation. Auricular extra-systoles were less frequent than ventricular extra-systoles in the ratio of one to four. Frequent auricular extra-systoles seem to portend the onset of fibrillation. Ventricular extra-systoles are at times infrequent but at others very frequent. Their presence seems to increase the patient's heart-consciousness. They occur with greater frequency after the administration of digitalis. Occurring after each normal beat, they produce what is termed coupled rhythm, an indication of excessive digitalis medication carrying a grave prognosis. We encountered this arrhythmia six times. In two of them, it occurred only shortly before death.

One of our patients, a woman of sixty-seven years, presented a very interesting combination of electrocardiographic findings. They showed a complete auriculo-ventricular block with an auricular rate of sixty, a ventricular rate of forty-eight. She had no symptoms referable to her heart. Five years later, she began to show evidence of heart failure. The electrocardiogram had not changed. Shortly after, she began to fibrillate and, though she had no treatment or extra rest, her congestive failure disappeared. The reason seems obvious. In the presence of a complete block, the auricles contract at times simultaneously with or shortly after the ventricles. These contractions interfere with complete ventricular filling. When fibrillation appears, there occurs a continuous pouring of blood from auricle to ventricles except during the actual periods of ventricular systole and a better circulation results.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

Whenever an irregular pulse is felt, auricular fibrillation must be borne in mind. Auricular and ventricular extra-systoles are usually easily distinguished from the gross irregularity of fibrillation but, when they

are frequent, they may so disturb the rhythm of the heart that differentiation becomes difficult without the aid of an electrocardiogram. Sinus arrhythmia may occasionally be deceptive, but typically there is a waxing and waning of the pulse rate with respiration. Since, in rapid fibrillation, the irregularity of the pulse is not easily perceived, it may be difficult to distinguish rapid fibrillation from paroxysmal tachycardia or sinus tachycardia. In the presence of a complete auriculoventricular block, the pulse remains slow and regular even in the presence of fibrillation and diagnosis cannot be made without the assistance of the electrocardiogram. Through the frequent use of the electrocardiogram, the clinician becomes more and more able to recognize the various types of arrhythmia without the assistance of technical equipment, but, nevertheless, a conclusive diagnosis of auricular fibrillation is almost always dependent on electrocardiographic proof. Even with the electrocardiogram, it is possible to overlook the gross cardiac irregularity unless the clinician actually measures the time intervals between beats with calipers to bring out the small difference between intervals between successive QRS waves.

PROGNOSIS

In a patient with auricular fibrillation, the prognosis depends on so many factors other than the mere presence of fibrillation that it becomes necessary to individualize each case. One must take into consideration the age of the patient, the etiologic factors producing the fibrillation, the extent of the cardiac pathology, the degree of cardiac failure if present, the duration of the fibrillation, and the presence of non-cardiac complications such as senility, advanced arteriosclerosis, coronary sclerosis, diabetes, nephritis and hyperthyroidism.

The presence of fibrillation in a person with a normal heart usually has the same prognosis as if the fibrillation were not present. Yet occasionally, rapid fibrillation in such a normal person produces heart failure which increases markedly the seriousness of the outlook. We have one patient who has lived fifty-two years with his fibrillation and another who has lived fifty-six. Neither has any cardiac symptoms or demonstrable cardiac pathology.

Paroxysmal fibrillation does not carry a grave prognosis. We have a woman of seventy under our care who has fibrillated six or eight times, each attack lasting two to forty-eight hours and she is still living and comparatively well except for her arteriosclerosis and marked hypertension. She has never had heart failure.

The fibrillation which occurs with Graves' disease is usually paroxysmal at first, later becoming permanent. After thyroidectomy and restoration to sinus rhythm with quinidine, these hearts usually return to normal and the fibrillation does not return.

In our experience, patients with fibrillation due to arteriosclerotic heart disease and with heart failure have a life expectancy of less than two years. As an exception, we have a man who had his first heart failure and fibrillation at sixty-seven, who is alive after seven years and has no evidence of heart failure. This man, however, fibrillated for only a brief period and not continuously. By the end of the second year, most of these patients are dead.

Embolism from a mural thrombus does not usually cause death though we had one fatality which occurred after embolism of the right external iliac artery with complete obliteration of the vessel. Half of our patients followed over a period of from a few days to seven years are now dead. Half of them died sudden deaths. Postmortems were done in half of these cases and an embolus found in only one.

Finally, the prognosis is considerably influenced by the treatment instituted. The wise use of medication may greatly prolong life. Unwise selection of drugs or too liberal use of digitalis may shorten life materially.

The critical problem in prognosis is, "What shall I tell the family?" The answer to this question requires great tact. While the physician must not withhold all hope, still he must not minimize the possibility of unanticipated complications and sudden death. No prognosis should be given until a complete survey of the patient's physical status has been made.

TREATMENT

(a) Prevention: Paroxysmal fibrillation may at times be prevented by the avoidance of fatigue and excess coffee and tobacco. Attacks may, at times, be terminated by

change of position of the body or pressure on the eyeballs or carotid plexus.

(b) Treatment of Persistent Fibrillation: Only two drugs are of value in the treatment of fibrillation: digitalis which slows the pulse rate, and quinidine which restores the heart to sinus rhythm. Digitalis is not indicated when the heart rate is already slow. When the rate is rapid and, particularly, in the presence of congestive failure, digitalis is the drug of choice. It slows the rate, increases the force of cardiac contraction, and often relieves the congestive failure. It should be used only in such dosage as is needed to accomplish this purpose whether that dose be sufficient for full digitalization or not. No attempt is made to produce a complete heart block. Evidence of overdigitalization should be watched for. Nausea, vomiting, frequent extra-systoles, and coupled rhythm should be indications for prompt reduction in digitalis medication.

Quinidine sulfate is used to stop fibrillation and restore the heart to sinus rhythm. This may be accomplished in one-third to one-half of those to whom adequate doses are given. Half of these patients whose sinus rhythm is restored will, within one to fourteen months, start fibrillating again. The required dosage is generally larger than that mentioned in textbooks. While one may start with a trial dose and then give three grains every four hours, it is often necessary to increase the dose in steps to six, seven and a half, or even nine grains each four hours. As much as fifty-four grains may be given in one day before the effect of the drug is successful. Once the rhythm has been restored to normal, the dose may be reduced to one and a half to three grains four times a day to maintain the normal rhythm.

There are certain contraindications to the use of quinidine. While individual authors disagree over certain details, it is our opinion that the following contraindications are based on clinical experience.

(a) Quinidine sensitivity with nausea, vomiting or collapse.

(b) In hyperthyroidism until after thyroidectomy, because the beneficial effect is only temporary.

(c) In the presence of heart failure unless digitalis will slow the heart and relieve the congestive failure.

(d) If angina pectoris was present before the onset of the fibrillation and relieved by its onset.

(e) If fibrillation has been present three months or longer because of the danger of embolism.

(f) If complete heart block is also present.

CONCLUSIONS

Auricular fibrillation is a syndrome with a varied clinical picture, multiple etiology and with a prognosis which is dependent on many factors other than the fibrillation itself. The institution of treatment should be based on a clear clinical understanding of the underlying pathology, the physiologic disturbance, the age and general condition of the patient, the extent to which the fibrillation of itself is responsible for symptoms, the indications for drug therapy, an understanding of the action of digitalis and quinidine and an appreciation both of the advantages and disadvantages of using these drugs. The wise clinician will weigh each angle of the case before instituting treatment or giving a prognosis.

Functional Bleeding—In most patients with functional bleeding, symptomatic improvement can be obtained by therapy designed to replace the normal secretion of the crippled ovary. If the crippling is temporary and the ovary recovers, treatment may be discontinued later. If, however, the ovarian damage is considerable and is permanent, improvement can be obtained only so long as replacement ovarian hormone therapy is continued. The cyclic use of large doses of estrogens is generally recommended. The dosage must be largely individualized but a general schedule is as follows: 1 mg. of estrogen (stilbestrol) given daily for a week, followed by 2 mg. daily for a week, followed by 3 mg. daily for a week. With the initiation of estrogen administration, bleeding will usually stop or become insignificant. Upon the discontinuance of treatment, withdrawal bleeding will occur resembling a normal menstrual period. Progesterone may be added during the last week of this schedule, but the expense and minimal benefits usually preclude its long-time use. When given, 20 to 40 mg. of progesterone per day for four to eight days are required to produce detectable histologic change in the endometrium.

Since endocrine therapy is replacement therapy and since it must be maintained to continue its benefits, it is used chiefly among younger women. There is usually some better method of treating these patients in the older age groups. It is seldom justifiable to maintain endocrine therapy for long periods of time after the age of 35 to 40 years.—*Brown and Bradbury, J. Iowa M. Soc., May '48.*

MENTAL ILL-HEALTH!! TIME TO IMMUNIZE!!

A JOB FOR EDUCATION

JOSEPH LEESE, Ph. D.
Professor of Psychology
Alabama Polytechnic Institute
Auburn, Alabama

In the last five years all the personnel who are intimately related to the health of the nation have been the recipients of a hearty round of criticism for the health status of young Americans. Everyone everywhere now knows about the sad story of Army rejections and about the discovery of great numbers of sick and diseased amongst the flower of our manhood—as if organizations like this one had not been crying to high heaven about it for years.

The educators are particularly sensitive about this state of affairs and about the criticism—just as I know you are where it has reflected on you—for they know, in many cases, there was little and still is little that could be done about it, particularly until a proper analysis is undertaken and sensible assessment of cause is made. They are, however, despite the unfairness of much of the comment and of the implications, extremely happy that again undeniable evidence of startling nature has been made available to the public.

Naturally the teachers, as all other groups, are hopeful that something be done about the so unsatisfactory situation in which some 10 million of 25 million men examined were found not fit enough physically to participate in the defense of their country (let me say, here, in an aside, that physical fitness to fight a war probably ought not be the acceptable criterion for health or physical fitness for the good productive life in a society). Let that be as it may, we are all quick to accept the challenge to improve our national health and with acceptance to conceive that improvement as involving a great broad program whose purpose must not be handicapped by misconceptions of function by those entrusted with it or by the miserliness of support which has foredoomed so many grand schemes in the past. The latter problem is beyond the scope of what I may completely assay here today, and I pass it by merely with the admonition that any real

comprehensive program of national health building can not succeed even a little without generous financial support. We all know the most obvious items, like hospitals, clinics, adequate physician's services, etc. require stupendous appropriations. The more subtle, and I believe more important, items require even greater expenditure.

The other aspect of the problem I should like to discuss a little with you, as I say, not so much from the public health nurse's viewpoint—because I am altogether too poorly informed there—but from the point of view of an educator and psychologist who is deeply interested in our developing youth and frankly very definitely prejudiced about some things which ought to be done to protect them and to preserve them.

Let me say at the outset that I am inclined to agree with George Perrott's observations on "Implications of Selective Service Rejection Statistics" in the April '46 issue of the *American Journal of Public Health*. Perrott says, "too much emphasis is still placed on the decline in mortality as a measure of achievement in public health work. Death is by no means the sole measure of the level of national health. To raise the health level, it is essential that increased attention be given to preventing and curing those conditions which cause illness or which reduce the capacity of the individual." In such an agreement I know certainly that I am not out of tune with our public health people who must always be concerned with what D. B. Klein so well defined in his book, *Mental Hygiene*, as the meliorative approach. But I suppose I am more emphatic, perhaps less reasonable, about the causative than the curative—about the mental than the physical because one of my jobs is not actual treatment of the fevered and infected and yours is—you can never lose sight of pain which is so needful of coming first. On the other hand I can be more concerned with the "quality of life than the quantity of life," as Victor Vogel of the U. S. Public Health Service puts it.

When we consider that Selective Service alone found one out of every three men examined in 1942-43 physically unfit, we know greater emphasis must be placed on the preventives. When we consider that "67.5 men out of every 1000 examined" were suffering mental disturbance severe enough to cause their rejection from military service, it would seem that the proportions of this problem are great enough to warrant careful analysis and eventual, if not immediate, inclusion as a major element in the preventive public health program. Now since the war I am more concerned with the mental hygiene problem than ever before. I suspect you are too. You must be having in its aftermath some of the same reflections I have to stimulate your will to do something about it. Almost every day in a college with over 5000 veterans in attendance there comes to my desk cases of mental ill-health of such proportions that at times I am amazed and incensed that our society has been unable to attack effectively the psychological viruses so patently at work.

Obviously in this, I do not imply in any way that mental hygiene and prophylaxis are new concepts to public health workers, nor do I contend that previous efforts to accomplish something along these lines have not been partially successful. Certainly that would be an injustice to the splendid leadership of the American Public Health Association, the National Committee on Mental Hygiene, the American Orthopsychiatric Association, the American Psychiatric Association, the American Psychological Association, to name but a few of the more prominent groups which have done yeoman service in this field. However, we must be honest with ourselves. Despite the hard work of these groups and the individuals that constitute them, the problem is a long way from solution. Indeed the passage of the Mental Health Act and the efforts of the U. S. Public Health Service to campaign against not only the ravages of mental ill-health but against the folk-lore surrounding it as courageously as it has against syphilis will add great impetus to the efforts initiated on a wide basis as long ago as 1909. But essentially the work that must be done will have to be undertaken at the grass roots with a clear conception of the value of a real

program of mental health building, and with the realization that all too little has been done heretofore not alone because of lack of funds and personnel but all too often because of lack of understanding, originality and energy on the part of those who should be responsible.

In the past the concepts of prophylactic and meliorative approaches to prevent occurrence of mental illness have received a good deal of oral tribute but have been neglected in practice. This is explainable. First, the ideas have come fast and furiously from high officials, from a few well-trained people, and from those who could sketch but did not have to do the stretch involved in serving a dozen masters at once as does the nurse whose job, properly defined, would require her seven-fold multiplication. Second, the trained personnel, the facilities, and the financial support have been lacking. Third, the task of trying to protect millions of people from the impingement of psycho-socio-economic stress is herculean. Fourth, the disinclination of the public to participate in or support programs initiated has delayed progress. Still the task needs to be done.

Perhaps we should do best with the rest of our time if I were to examine a little more the significant relationship between public health and what I call mental ill-health, and indicate steps which from the educator's viewpoint seem advisable for the public health nurse and for himself and others in seeking an adequate mode of attack on this threat to national welfare—in the long run as frightening as cancer now is—and smallpox and diphtheria once were.

I presume, with the kind of training nurses have, you are much more at home with the term, psychosomatic disability. In that respect I don't need to exhaust much time in reminding you that the majority of illnesses with which the public health nurse now has to deal are no longer prevented, diagnosed, or, perhaps even treated by the application of the traditional public health techniques which have been so successful in epidemic diseases. The illnesses so prevalent today are often of unknown origin and resist our standard treatment procedure and usual management program. They are individual and expensive illnesses in which the personality of the patient is a major factor.

Cardiovascular, gastrointestinal and arthritic diseases characterized by chronicity are fast displacing the old standbys we have controlled by vaccination, sanitation, quarantine and health supervision.

I noted with real pleasure the announcement in the *Birmingham Post* that several papers presented at the Southern Psychiatric Association meeting dealt with psychosomatic problems. More evidence, clearly, that we are faced with the realization, in the modern world, that an individual is neither mind nor body but an organic unit and that mental and physical health are indivisible. There is no illness or life adjustment without important emotional and psychic factors; and emotions, as research has shown, are always accompanied by physiological variations—good, bad, and indifferent. The individual who is angry or afraid, in the doctor's office or elsewhere, responds to these emotions with physical symptoms such as faster heart beat, genitourinary adjustment, sphincter changes, peristaltic variations, muscular tension, etc. When such body manifestations persist and the individual or social situation precludes any adequate expression of them or adequate solution of the problems which give rise to them—these perfectly normal accompaniments of emotion affect the person involved in such a way as to encourage a dysfunction of the body which resembles, and often becomes, a major illness. Such emotional or psychic disturbance is now regularly sought as the source of hives, asthma, cardiac decompensation, hypertension, duodenal ulcer, ulcerative colitis, eczema, alopecia, etc. In other words, from the psychosomatic point of view, functional diseases are no longer thought of as opposed to organic diseases. Functional disorders are the early stages of the organic diseases. The distinction is thus not one of *kind*, but of *time*.

When we accept this point of view, we are already committed to the need for a much more comprehensive program of health protection than that which involves pills, douches, swabs and surgery. We know that health becomes a problem of removing not the streptococcus and meningococcus but of removing the conditions which give rise to body expressions of human frustration. When we accept the psychosomatic thesis we are setting ourselves the task of minis-

tering to the slivers in human personality which become as festered as wood chips in the thumb, but which are much more difficult to remove and which spread and infect much more quickly and disastrously. We undertake to treat personality infections for which there are no lancets and no magic sulphadiazines or penicillins—and we are often as helpless as Nightingale was with gangrene and as uninformed as King John's physician was about the plague.

I know you are already highly appreciative of the tremendous significance of this tie-up between sick bodies and sick adjustment as you make your daily rounds. I know you are constantly troubled by the backaches, headaches, stomachaches, general tirednesses you hear about and which seem to have no adequate etiology and which do not respond to ageless remedies. In these you recognize the products of mental ill-health, and in many, many cases doubtless almost immediately "spot" the cause. These people are sick in body, disabled, but the source time and time again is in ideas, problems, defeats, bills, estrangement, fear, frustration.

Now that is not all there is to mental ill-health as you well know. There are, in our society, other manifestations of the mental sickness which certainly needs treatment. They are conditions which bar the way to fuller accomplishment of the public health nurse's work—a people who live infectiously happy, energetic, productive lives.

These wider, more subtle conditions are all too often improperly or insufficiently explained. They are like the consistent respiratory infections and the under-nourishment that provide the infancy for tuberculosis. The result has been an historical tradition that mental health disability refers to violent variations from the normal in people who are popularly referred to as queer, insane, looney, etc. Certainly those who do vary so extremely from the normal to be irresponsible and unable to control themselves properly publicly and privately are of necessity to be included as mental health problems. They are a startling complement over 600,000, and they cost us about 200 million a year—and that does not include anywhere near all who need help.

However, there are a vast number of people who never come to notice as queer or

unusual but who have never ending struggle with the whole business of living. Their ability to adjust to the demands of their environment is limited; their psychological resistance is low; their susceptibility to the microbes which attack psychic homeostasis and general stability is high; they have no natural or marvelously synthetic immunity to the ever-present, potent germs that breed in the slums, in economic insecurity, in the misgivings of the unsuccessful over-ambitious, in the problems too big to be handled alone and with average intelligence. These are the people constantly confused, irritable, weary, "at wit's end," irrational and unreasonable, lethargic, disconsolate. The range of their maladjustment runs from ideas of fancy to excessive worry and alcoholic debauches—all of which prevent them from full, happy participation in their society. They are the unfortunates unable to cope with their problems, and who decline in psychological health equally as tragically as the victims of tuberculosis lose their physical strength to the dreaded ravages of that decay and collapse. Out of their lingering and progressive sickness come decline in output, decrease in happiness, and tragic reflections in the lives of others, for mental ill-health is terribly contagious although we have not yet recognized that fact.

And we have not canvassed all when we speak of these products—neuroticism, insomnia, absenteeism from work, indecision, troublesome aggressiveness, pathologic lying, tantrums, fixed and paranoid ideas, etc. as evidences of mental sickness which are and will be appalling toll charge on the bridge of happy life. There are the further removed problems of divorce, malcontent, irresponsible drifting, broken marriage, crime, juvenile delinquency, sex offense, suicide, general strife which are the societal harvest of cripples and deformed from the disease, mental ill-health. Obviously a very broad program is in order to brake the epidemic which in our time threatens to disable more people and destroy more happiness than specific plagues like yellow fever, smallpox, and diphtheria ever did. Let me quote from the U. S. Public Health Service on that . . . "It is probable that the total incapacity from all types of mental disorders in a community is greater than the disability from all physical conditions combined."

Victor Vogel wrote in January 1941 that "the capacity to live productively and happily is surely a concern of the same humanitarian organization which has been so long engaged in promoting public health in its usual conception. This quality of living," he believed, "is the biggest problem yet remaining in the public health field." I hope you agree with Vogel. But the idea that public health workers ought to be interested, in itself, is not enough. There are more potent reasons why positive, productive steps need be taken. The following three only begin the list:

1. The cost of rehabilitation and convalescence in cases of mental sicknesses, be they cases of soldier's heart or juvenile delinquency born of broken homes, is tremendous.

2. The erosion in human capital from fractured minds is unassessable but, like erosion, everywhere almost impossible to stop, once underway.

3. Mental sickness is highly contagious and peculiarly resistant to quick remedy.

It is good to know much has already been done by the Public Health Service and that so much more is now planned through the help of the National Mental Health Act. The stock of mental health is on the rise.

In expanding your services and in taking on wider responsibilities you will need to seek the help of every agency and organization which can further your program.

The public school not only can do much to support the educational program you know is fundamental to real progress but also can do much to take leadership in providing conditions especially conducive to balanced living. It can inform youth and patrons about all aspects of a mental health building program and provide guidance and build power in youth to resist the onslaughts of mental disease factors. If you, the nurses, are to be charged with a very great part of the task of eradicating mental illness, you should expect and demand of the schools a far more positive effort than now is being exerted.

For the schools here to take a more helpful position would require many radical adjustments. Some adjustments could be accomplished probably without too severe handicaps, but the real adjustments will require extensive alteration and addition.

Just as with many of our groups in society, our school people in general lack what has been referred to as the "mental health" point of view. Many teachers have not yet admitted that children come to school with emotions, fears, and experiences dreadfully in need of treatment. Those teachers still do not know how to inject the human element into teaching. They believe schooling involves the memorization of outmoded and useless information in the face of threatening, imminent failure. We are, happily, displacing some of that type but they are still too much with us. To convince them of the need for different approaches to children, to inspire them with a broader, more personal philosophy of education, and to provide them, and their more congenial and willing colleagues, with the skills for the proper diagnosis and treatment of incipient mental sicknesses in all their forms, you can appreciate, would be a tremendous task. But it ought to be done despite radical adjustment and resistance.

In a sense, the prognosis is good. Country wide, amongst educational leaders, there are Spartan efforts being made to explain what schools can do to apprise teachers of the types and kinds of mental ill-health the schools bring about, the kinds the school fall heir to as they serve all the children of all the people, and, the kinds the typical classroom teacher can diagnose and treat. Everywhere teacher training institutions are adding courses in mental hygiene and training teachers in the fundamental skills with which to scourge the diseases of the mind, and might I say poetically, the heart, from the "cultures" which give first harbor and food to them. A vast amount of literature is developing in education journals and texts. Thoroughgoing guidance and counseling centers are being developed and state departments are setting regulations and determining qualifications to assure qualified personnel. The fever and fomentation should catch on in Alabama. The public health nurses should encourage it at every turn, in all their contacts with patrons and school personnel.

Certainly there should be made available through the schools everywhere special guidance and counseling services so that at the earliest possible moment symptoms of mental sickness may be detected and defi-

nite steps taken to eliminate the causes. (Support for the guidance clinic could come from no better source than the Attorney General whose officially called National Conference on the Prevention and Control of Delinquency in its report reemphasized the imperative for treatment of the delinquent).

At present in this state, there is very little skilled counseling, guidance, clinical service available to students. Local school districts do not as a rule provide trained personnel, to work intimately with the frustrated, mal-adjusted, mental deviate, slow-learning, mentally, socially, and emotionally abused children in our communities. There is no vital and comprehensive guidance bureau, with trained psychologists, psychotherapists, child specialists, psychometrists, and skilled counsellors in our state education department to provide leadership and consultative service. We can have no real program until there is developed such an ally through the education unit.

It probably is too much to expect in Alabama to seek a department of child study and a full-time guidance bureau in every school, but provision may very well be made on the county basis with provision for special services in the more difficult cases from the resident mental hygiene clinic I would like to see in each population area of from 50-75,000.

Other adjustments which are in order might not be so difficult, although revision of the curriculum to provide courses or units, in, let us say, even the extent and general nature of mental ill-health, will require the broad education of personnel and the development of extensive materials. A great deal more time will need to be devoted to child study, to the solution of pupil personal problems, to classroom consideration of manifestations of mental ill-health and of the factors which cause such disability. This will necessitate schedule changes and some new appreciation of the value of such subject matter content. In-service education will thus become a must.

A fully developed program will require many new activities sponsored by the school, particularly ones which mean more intimate work in the community and in the home. For too long schools have, like castles, sat separated from the community by a moat of

misguidance. "Schooling"—learning to read and write, to commit to memory the boundaries of a state, to work out the formula for the inclined plane—has been sort of a detached process without there being consideration of the supreme goal of education—helping young people toward better total adjustment. The public health nurses, who know how closely related are good adjustment and the good type and kind of family and neighborhood situations, can well agitate everywhere for adaptations and for reorganization in school programs, to insure the school's participation in enterprises, activities, places, and problems beyond the traditional scope of the institution.

With the broadening of the school's function through its attempt to guide the experiences of "youth-beyond-the-school" will come need for much closer study of the antecedents of behavior in home settings, on the playground, in the gang life, etc. But even more should be expected, for the conditions in the community which sustain and generate mental ill-health must be brought to the attention of the adults; and help must be furnished them in coping with the manifold aspects. Added responsibility for a broad revision of program to cater to adult needs in this area is thus in order.

Broad administrative improvement of this order obviously needs to be accompanied by significant modifications in practices involving discipline, failure, punishment and motivation. Under the impact of psychological research, attitudes are changing slowly; and gradually, harmful techniques are being displaced by more salutary ones. Encouragement, however, will speed the alterations in teaching approach. The presence of maladjustment in school children, in children of school age, and in youth who should be demonstrating beneficial results of education is a worrisome reminder and stimulant to school personnel. Public health people should not overlook this constant motivation as a resource when the battle is fully joined. Everywhere teaching personnel should be encouraged to scrap outmoded techniques and to experiment with methods demonstrated by research to be more human as well as more effective.

Let me say here at the end that when the schools are called upon there will be much you may want them to do and much they

will have discovered for themselves to do. There are to my mind, though, several basic matters with which the schools could do a slick job were they encouraged to do so. I would like to lay them down here as suggestions for you. I submit that a first task needs be:

1. *Education of the individual to a realistic way of life in the socio-economic milieu to which his physical and mental assets and liabilities are adapted.* Our schools should be free to explain and value life as it is and aid students in developing the skills, in recognizing the stresses of conformity as they are. Academic learning which does not breathe with life will not develop the resiliency so necessary. Education for the solution of personal problems is an imperative. It can not be long delayed.

2. *Education of the individual to understand himself.* That seems simple, and it is as old as Socrates, but for the purpose of mental health it can not be emphasized enough. The motives and desires that lie basic to frustration are all too little understood, and the remote and hidden factors that determine behavior are seldom, if ever, studied in the school. The most of school study is directed towards one's understanding the civilization and only occasionally toward analyzing the sources of desire, the artifacts of satisfaction, the forerunners of gloom, and the causes of temperamental variations. It is the rare school child who has studied the causes of blushing, the nature of headaches before exams and vomiting before school attendance, or examined the psychological bases of alcoholism. Have you ever talked to a high school student who knew about sublimating desire healthfully and effectively, who could recognize in himself the mental mechanisms and handle them?

In every school we have courses in English, history and mathematics, but I know of not one school in Alabama which has a course in Personality or Human Relations; yet we live with ourselves every day and we must constantly work with others.

3. *Education of the individual to standards of value that are attainable with his physical, intellectual and motivational equipment.* Nothing is more tragic than the spectacle of the child who, goaded on by parents, and dreams of presidential conquest, strains

every one of the seams of integrated happiness to achieve the impossible. There is much of just that or its opposite in negativistic, aggressive failures who have been reduced to counter attack. A new deal in the schools in which children are properly guided in terms of their ability into experience they can handle actively, originally, and successfully is in order. With proper and timely guidance toward reasonable vocational selection, with intelligent assessment of intellectual and physical potentiality, and with useful training for the work and social world, our young people could have much greater capital with which to live happily with themselves. They would not strive against the impossible, worry helplessly about it, and scheme to overcome their lacks by every kind of unacceptable conscious or subconscious procedure.

There are, of course, other such tasks and maybe more important ones, but, as I see it, these come near being fundamental; and, I am sure, properly handled, can contribute immeasurably in this important public health concern.

Before closing, I would like to reiterate the plea that we all work as diligently as

possible in this campaign which has now reached national proportions and new heights with the passage of the National Mental Health Act. Should we do so, it is very likely that there will come to pass the ideal of which Sigmund Freud spoke so hopefully and confidently in 1918 at the International Psychoanalytic Congress at Budapest ... "But one day the conscience of society will awaken, and we shall realize that ... man has the same claim to mental treatment that he now has to surgical aid. And we shall also come to see that the neuroses menace the health of the people no less than does tuberculosis, and that, like tuberculosis, the neuroses cannot be left to the ineffectual care of the individual himself. When that time comes, institutes and consultation centers will be established and staffed with trained physicians, so that men who would otherwise give way to drink, women who might break down as a result of overwhelming deprivations, and children whose choice would be limited to delinquency or neurosis may be strengthened ... to resist such unhealthy tendencies and ... become capable of social achievements."

THE TREATMENT OF BRILL'S FEVER

JAMES T. GRIMES, M. D.

Enterprise, Alabama

On July 1, 1944 an editorial appeared in the *Journal of the American Medical Association* titled "Chemotherapy of Murine Typhus." In this editorial references were made to several dyes which were then being used on mice in the search for a chemotherapeutic agent against typhus or Brill's fever. At that time there was no specific treatment for the disease. On October 7th of the same year the first published report of the use of para-aminobenzoic acid, referred to hereafter as PAB, in the treatment of Brill's disease appeared in the same journal. Since that time only a few articles have been published regarding the use of PAB in murine typhus but many have been reported of its use in Rocky Mountain spotted fever.

Read before the Southeastern Division of the Association, Enterprise, March 25, 1948.

From the Gibson Clinic.

First, a word about the diagnosis of Brill's disease before we proceed with details of treatment. Since the efficacy of the treatment to be outlined is at its best when begun on the second or third day of illness, one usually begins treatment before confirmatory laboratory diagnosis can be made. Therefore, on a clinical history of sudden onset of chills, fever, general malaise, generalized muscular aching, headache, and almost invariably insomnia, plus negative physical findings for specific acute infection, a negative urinalysis and a normal or low white blood count, one may assume that he is dealing with a case of endemic typhus or Brill's fever and begin treatment.

The only therapeutic agents at hand prior to 1944 were those for the relief of discomfort and the restoration of fluid balance. In 1942 Snyder and his group first reported the

inhibitory action of PAB on the rickettsial infections in mice. In 1944 Yeomans reported the first series of cases of Brill's disease treated with PAB.

Para-aminobenzoic acid is a factor of the vitamin B complex and as such plays an important role in the intermediary metabolism of carbohydrates. Just what its whole role in cellular metabolism is has never been determined. Because of its ability to raise the respiratory quotient of the cells of the host, it inhibits further growth of the rickettsial organisms. It does not affect the rickettsia already in the body nor does it repair damage already done to blood vessels. Even though seemingly specific in its action, it does not interfere with the development of immunity in a treated patient. It is excreted rapidly by the kidneys and most of a four-gram dose is out of the blood stream within four or five hours. PAB is best given by mouth in a 5% solution of sodium bicarbonate for two reasons: 1. to lessen the gastric irritation which might be caused by the drug; and 2. to prevent acidosis. In moribund or comatose patients it may be given intravenously as the sodium salt but by that method it is so rapidly excreted that it is better given as a continuous intramuscular drip of a 25% solution. Results are best when treatment is started on the second or third day of illness, though beneficial results may be expected when treatment is delayed as long as the seventh day. The dosage required is that necessary to attain a 20 to 30 milligram per cent blood level. This may be done in the usual case by administering 2 to 4 grams of PAB every two to four hours day and night. The dangers of the drug are few though one must always watch for agranulocytosis while administering this treatment.

Within 24 hours after initiation of treatment with PAB, the patient begins to feel and look better. His appetite begins to return. Fever falls by rapid lysis within two to four days after initiation of treatment. The pathognomonic rash usually appears but the lesions are fewer in number and they tend to disappear more quickly while patients are being treated with PAB.

Penicillin is the drug of choice for treatment of complications or secondary infection. Although having no effect on the rickettsial infection, penicillin is given a pro-

longed bacteriostatic action in the presence of PAB. Sulfonamides should not be used. Not only are they of no benefit but they tend to increase the severity of the infection in man. The explanation for this is not yet apparent but the well-known antagonistic action between the sulfonamides and PAB may be the answer.

The question of fluid balance is very important in rickettsial diseases. The damage done to the body occurs in the endothelial and smooth muscle cells resulting in intravascular thrombi and necrosis of blood vessels. These changes lead to extravasation of fluid, chlorides and plasma proteins. The fluids must be replaced or resulting nitrogen retention and circulatory collapse will result. A replacement of fluid is best brought about with plasma which raises the osmotic pressure within the blood vessels. Replacement with saline aggravates the existing damage.

I have to present to you temperature charts and brief protocols on six cases of Brill's fever treated here in Gibson Hospital. As you will see, the results have been striking as compared to the untreated case. By untreated case, I mean cases which are not given para-aminobenzoic acid.

REPORT OF CASES

1. Mr. T. O. B. Hospital No. 12,806. 36 year old white male admitted on 9/19/46. History of three hard chills, fever, muscular aches and insomnia of 30 hours duration. W. B. C. 6,900, urinalysis negative, blood agglutinations negative on 9/19/46. PAB 2 grams every 2 hours with response as shown on the chart. On 9/27/46 patient returned to the office and agglutination was then positive for *Proteus* 0x19 in a dilution of 1:640.

2. Mrs. J. I. J. Hospital No. 12,958. This 35 year old white woman was admitted to the hospital on October 14, 1946 with a history of an illness of three days duration consisting of generalized muscular aches, chilly sensations, muscular soreness, headache and insomnia. W. B. C. was 7,400, urinalysis was negative and malarial smears were negative. Blood agglutinations were all negative on 10/15/46 and PAB was started the same day. Temperature response is shown on the chart. On 10/18/46 her blood agglutinations for *Proteus* 0x19 became positive in a dilution of 1:340.

3. Mr. L. M. Hospital No. 12,866. This 40 year old white male was admitted to the hospital on 9/26/46 with a history of shaking chills, fever, headache, insomnia and severe sweats of two days duration. W. B. C. was 7,200, urinalysis negative, and blood agglutinations negative on that date. Patient was treated with PAB with a temperature response as seen on the chart and on 10/3/46 a

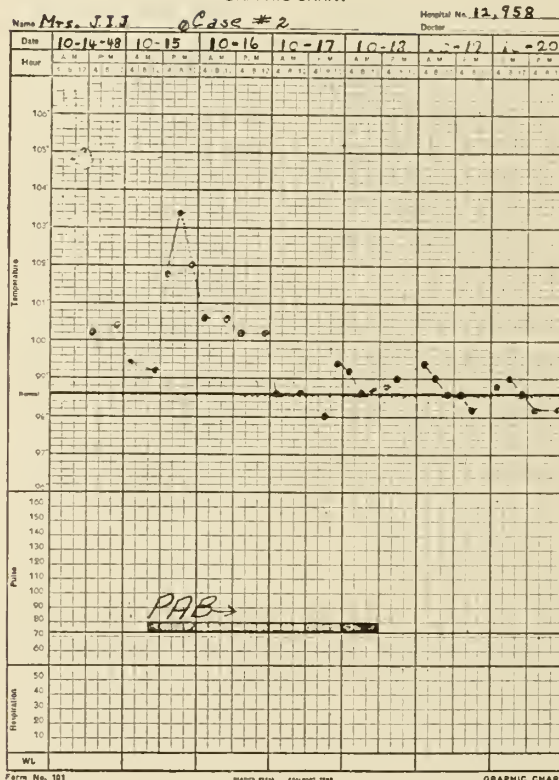
positive blood agglutination for *Proteus* 0x19 in a dilution of 1:640 was found.

4. Mrs. T. O. G. Hospital No. 14, 449. This 50 year old white female was admitted to the hospital on 7/19/47 with a history of having been ill for two days with chills, fever, headache, back-ache and insomnia. W. B. C. 9,000, urinalysis normal. Blood and stool cultures were negative. All agglutinations were negative on 7/19/47 but on 7/25/47 agglutinations for *Proteus* 0x19 became positive in a dilution of 1:640.

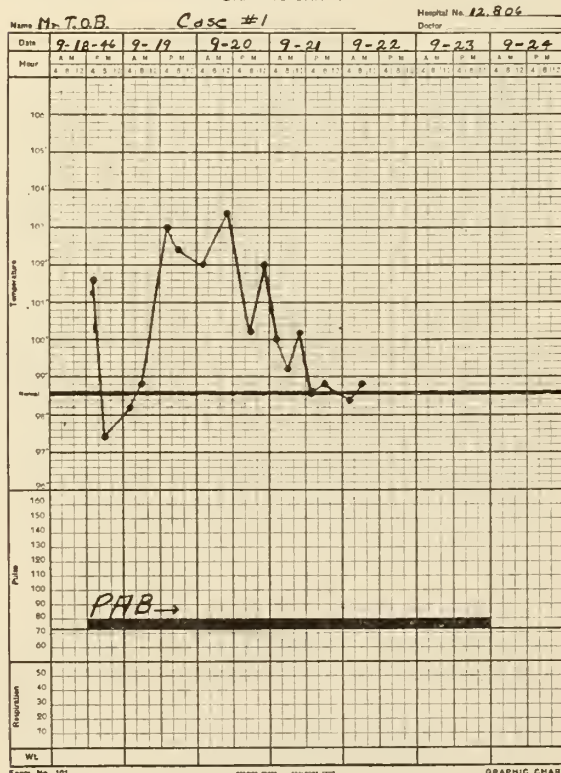
5. Mrs. P. S. Hospital No. 13,466. This 55 year old white female was admitted to the hospital on 1/22/47 with a history of two days of slight fever and generalized aching. On the day of admission she had a hard chill with fever and began aching all over. She was unable to sleep the night before admission. W. B. C. 8,400, urinalysis negative. All agglutinations were negative on the day of admission but on 1/27/47 the agglutinations for *Proteus* 0x19 became positive in a dilution of 1:340.

6. Mr. C. A. Hospital No. 12,514. This 26 year old white male was admitted to the hospital on 7/25/46 with a history of chills, fever, generalized aching, insomnia, and headache of two days duration. Agglutinations were negative on the day of admission and on 8/2/46 agglutinations were positive for *Proteus* 0x19 in a dilution of 1:640. He was given no specific treatment other than intravenous plasma and glucose in water. In this case we see the typical temperature course of an untreated case of Brill's disease.

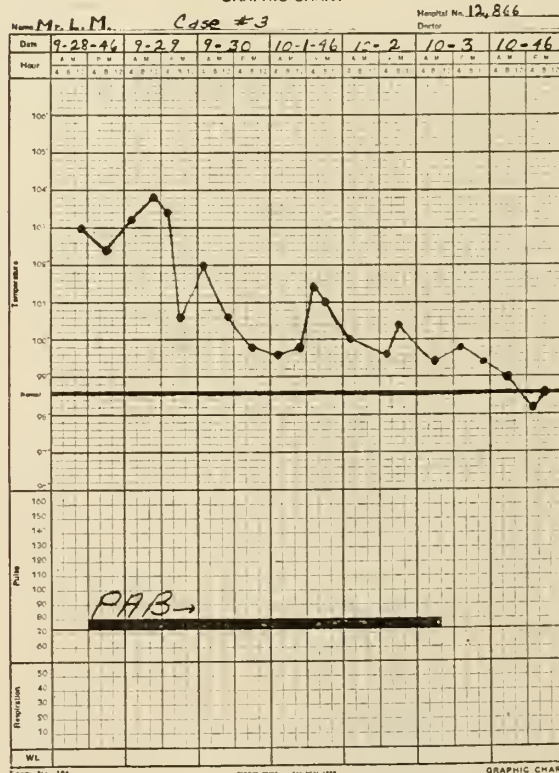
GRAPHIC CHART



GRAPHIC CHART



GRAPHIC CHART



GRAPHIC CHART

Farm No. 191

2014年12月11日 星期五

GRAPHIC CHART

Form No. 101

Figure 1. The structure of the proposed system.

GRAPHIC CHART

GRAPHIC CHART

Form No. 101

2013年12月15日 星期日

COASTING CHART

Form No. 101

RECEIVED FROM: 094, 0447 734

GRAPHIC CHART

Even though we do not know the actual mode of action of PAB in the treatment of Brill's fever, there is certainly sufficient evidence in favor of it to warrant routine administration in patients presenting the clinical picture of that disease. By treatment with this drug the temperature returns to normal 7 to 9 days sooner than in the untreated cases and many of the serious complications are eliminated. A simple rule to follow in using PAB is this: give 2 to 4 grams every 2 to 4 hours for 2 to 4 days.

Here in Southeast Alabama where Brill's disease unfortunately is still present because of the prevalence of the rat, we feel that this is a big step toward better health for more people in this particular community.

REFERENCES

1. Greely, D. M., The Treatment of Rocky Mountain Spotted Fever in Children, *Med. Clin. N. Amer.* 31: 647, 1947.
2. Yeomans, Andrew, et al.: The Therapeutic Effect of PAB in Louse Borne Typhus Fever, *J. A. M. A.* 126: 349, 1944.
3. Ravenel, S. F.: Therapy of Spotted Fever, *J. A. M. A.* 133: 989, 1947.
4. Harrell, G. T., et al.: The Treatment of Spotted Fever, With Particular Reference to Fluids, *J. A. M. A.* 126: 929, 1944.
5. Pinkerton, Henry: Chemotherapeutic Studies in Rickettsial Diseases, *South. M. J.* 38: 371, 1945.
6. Editorial, Chemotherapy of Murine Typhus, *J. A. M. A.* 125: 633, 1944.
7. Personal Communications.

Hypertension—When a patient insists on detailed information as to blood pressure level, and when it is deemed advisable to be specific with such a patient, it is often wise to exaggerate the truth a bit. Some people will ask what the dangerous level is. To this query the true reply is that there is no fixed point below which a stroke is not going to occur, and above which its likelihood is greater. As a working rule of thumb, however, I frequently tell patients that a level under 200 systolic is reasonably safe. This is comforting if the blood pressure of the patient under consideration is in the neighborhood of 190. I believe that a patient usually requires active medication when the pressure reaches this level or beyond. At the same time, it is explained that cerebral and cardiac accidents may occur with the pressure below 200 and may not occur with it above this level, but from a safety and average standpoint, it is better to keep check on this level. It is also indicated that a level of 180 or less is safe enough to maintain in a patient continuously. If a patient has a blood pressure on first or second examination of 200 or 210, it may be expected that with minimal therapy that level will drop to 180 or less. *Saslaw, J. Florida M. A., May '48.*

Early Ambulation—Newberger in 1943 reviewed the literature of early postoperative walking and his analysis brought out the following advantages: improved morale of the patient, avoidance of asthenia, economy to both the patient and the hospital, simplification of postoperative care, reduction of pulmonary complications four to five fold, avoidance of the use of catheters and laxatives, reduction of adhesions, more rapid normal healing, reduction of thrombosis and embolism. Certainly all of us who have used early ambulation for our patients have been convinced that it has its advantages.

In order to be able to appreciate the practice of getting patients up soon following surgical insult, it is felt that certain general physiologic principles must be understood. Both in health and disease, the function of the body depends upon efficient circulation, respiration, digestion, and the elimination of waste. These functions are disturbed by anesthesia and surgery, and strict immobilization increases this disturbance. Reflexly, from pain and fear the respiratory muscular function is impaired, leading to atelectasis and anoxia; the circulation is slowed leading to shock, thrombosis, phlebitis and embolism, as well as delayed wound healing; the motor mechanism of the intestine is inhibited leading to distention, the absorption of toxins and dehydration. These factors, with inactivity superimposed, delay recovery and may even go so far as to carry the patient over the threshold. However, if the patient is encouraged to move around, his pain is short-lived, his body functions normally, healing is more rapid and complications are avoided.

Let us try to clarify what is meant by early ambulation. For some patients it means walking two to three hours postoperatively, and for others it merely means having them perform certain exercises in bed. It is obvious that rest and exercise should be balanced, for either, if prolonged, will produce harmful results. Too much exercise will result in exhaustion, and too much rest will produce atony. Both of these delay healing.

It is known that many postoperative complications are apparent or incipient within the first twenty-four hours after operation, so the time to prevent their occurrence is immediately after operation, and not four to five days later. In elderly patients and those that are not able to be classified as good surgical risks, only simple exercise in bed should be used the first day; these exercises should consist mainly of flexing and extending the knees and ankles and wiggling the toes. Stronger patients can be got out of bed on their feet in two to three hours after surgery, depending upon the anesthetic. It is highly recommended that patients be made to cough in the standing position the first time they get up; the reason is that they are better able to remove mucus plugs from their bronchial tree.

Do not get the idea that early ambulation is a panacea. Basic surgical principles . . . must be foremost, if any surgical procedure is to be successful.—*Pittman, J. M. A. Georgia, May '48.*

Treatment of Prostatism—Many cases of prostatism can and should be treated by non-operative methods. Let me say here that endocrine treatment has no place at the present time in the treatment of the benign prostate, both androgens and estrogens having failed to give any predictable results. The mild prostatic, whose chief complaints are a weakening stream and moderate nocturia, does not need to be rushed to the operating room unless at least several ounces of residual urine are present. If pyuria is present, local treatment, consisting of bladder irrigations with a mild antiseptic solution, bladder instillations of 5 per cent argyrol, and some urinary antiseptic by mouth, should be prescribed. If the gland is large and soft, or if the expressed secretion contains much pus, gentle prostatic massage will often give very definite results. If the gland is quite firm, it has been my experience that massage is of no benefit. Even if all the symptoms and findings of prostatism are present, including retention of urine, there are still some cases in which non-operative treatment is indicated, namely, patients who, because of advanced debility, serious cardiac lesions, or other third degree pathologic changes, have a life expectancy of only a few weeks or months at the best. Execution of these patients on account of inability to urinate is not good judgment. Catheter life is not pleasant, but it is better than no life at all. If catheterization is impossible, a quick suprapubic cystostomy under local anesthesia, or the introduction of a small catheter using a trocar suprapubically, should be the treatment adopted.

Thus the mild prostatic and the advanced prostatic with a short life expectancy due to other pathological changes are eliminated from the list of candidates for prostatectomy.

The patient who has a reasonable life expectancy, and who has moderate or severe symptoms and findings of prostatism, should be advised to have his prostate operated upon. At this point, the general or family physician, or medical advisor, should refer the patient to a competent urologist. The referring physician should not attempt to select the type of operation to be performed but should leave that strictly to the operating surgeon. There are, as you well know, the transurethral, the suprapubic, and the perineal methods of relieving the prostatic obstruction. Each method has its good points, and bad points, and the choice of method should be left to the discretion of the man who does the operation. If the operation to be performed is determined by anyone other than the operating surgeon, undesirable results may ensue. Suffice it to say here that all the three methods are capable of giving good results, and all are likewise capable of giving poor results, and the judgment of the urologist should be accepted by the patient and by his referring physician as to which operation is to be done. The operator should likewise be responsible for choice of anesthetic. Published statistics seem to show that the mortality rates accompanying the different operations are within a few percentage points of each other, and the average mortality the country over will probably not exceed 5 per cent. The morbidity rates vary

more than the mortality rates with the different methods of operation. Again let me state that the choice of operation should be left strictly up to the operating surgeon.

Postoperative Treatment. After the patient has had his operation, and is home from the hospital, the general or family practitioner may be called upon to supervise his convalescence and follow up treatment, if the patient lives a good distance from the surgeon. Attention to the bladder, in the form of irrigations and instillations to clear up the infection which is practically always present, is usually advisable. The administration of urinary antiseptics for a considerable period of time after surgery is also usually necessary. Good postoperative and follow up treatment after prostatic surgery is more important than it is after many other operations—*Hargrove, New Orleans M. & S. J., May '48.*

Epistaxis—In all cases of epistaxis Kiesselbach's area should be carefully inspected first. The thumb may be used to raise the tip of the nose, or the nostril may be spread with a small nasal speculum to expose the area. If the patient is seen after the hemorrhage, the dilated vessels of the septum with the red and white dots on the mucosa will be an aid in locating the bleeding area. The bleeding may be controlled with cold cotton or gauze compresses pressing the alares of the lower lateral cartilages against the anterior portion of the septum with the thumb and index finger of the right hand. The head should be lower than the chest and the mouth open; the patient may sit in a chair or lie on the abdomen with head extended over the side of the bed. In this position the blood accumulates in the nose and the patient does not have the fear of suffocating, can breathe comfortably through the mouth, and can also swallow. The bleeding point is located under direct vision and should be cauterized, preferably with chromic acid. A silver probe is heated over the burner and dipped in the chromic crystals. Some of these will adhere and when heated over the flame will melt and form a bead at the end of the probe. When the chromic bead touches the bleeding vessel it coagulates the blood, forming a light yellow scab. The excess chromic acid is washed off with water or neutralized with sodium bicarbonate solution on a cotton swab.

Most cases of nasal hemorrhage can be controlled in this way, but this method sometimes fails since the bleeding originates in the back of the nose. The bleeding may be slowed by temporarily placing cocaine 5 per cent and adrenalin moistened gauze packs in the nose. When the gauze packs are removed, topical thrombin may be sprayed or dropped with a 22 gauge spinal needle to the bleeding points which are seen as raised red and white dots on the mucosa. When the hemorrhage is brisk, it is best to pack the nose with strips of gelfoam moistened with thrombin, beginning on the floor, so that one end reaches the posterior naris and the other the vestibule. The gelfoam packs may be left in the nose several days without risk of traumatizing or injuring the membranes.—*Woodson, Texas State J. Med., May '48.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

DOUGLAS L. CANNON Montgomery

Associate Editors

JOHN W. SIMPSON Birmingham
C. E. ABBOTT Tuscaloosa
JOHN L. BRANCH Montgomery
D. G. GILL Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue Montgomery, Ala.

Subscription Price \$3.00 Per Year

June 1948

THE PHYSICIAN AND ALABAMA'S BARBITURATE LAW

The attention of all members of the Association is invited to Alabama's new barbiturate law, enacted during the 1947 session of the State Legislature, and in the observance of which the cooperation of every one is urged.

Section 3 of the law places upon the physician a responsibility regarding refills of barbiturate prescriptions, which may not "be refilled unless and as designated on the prescription by the practitioner." This is interpreted to mean that the physician must indicate on the original prescription whether or not he wishes it refilled, and, if so, how often.

Attention is called, also, to the obligation of the physician under this law to furnish the pharmacist in writing, within 72 hours, any barbiturate prescription that he may have found necessary to give by telephone.

In this connection, the Bureau of Narcotics is issuing repeated warnings to pharmacists in various parts of the country in regard to the filling of orders for narcotic prescriptions telephoned to them by physicians or other practitioners. The Bureau states this is a violation of the Federal Narcotic Law.

If a pharmacist complies with a physician's telephoned order for narcotics, he violates the law as a principal and the physician violates it as an aider and abettor. Penalties for such violations are loss of narcotic license, fine and/or prison term.

Pharmacists may sell or dispense narcotic drugs only in pursuance to a written (ink or indelible pencil) prescription issued by a physician, dentist or veterinary surgeon, registered under the law, provided that the prescription shall be dated as of the day on which signed and shall be signed by the physician, dentist or veterinary surgeon who shall have issued it. The prescription must show the patient's name, address, and name and address and registry number of the practitioner.

In cases of extreme emergency, in order to expedite the delivery of narcotics, a telephoned prescription may be accepted, but even then a properly prepared one must be obtained at the time of the delivery of the drugs.

These laws are essential to the public health and safety, and the observance of these laws is a definite part of the responsibility and obligation the physician and pharmacist have assumed as members of their respective professions to protect the public health and safety of the patient.

The members of the Association are requested to cooperate with pharmacists who fill their prescriptions in the observance of these laws.

COOPERATION IS NEEDED

It is significant that states having the highest degree of completeness in death registration report a close working relationship between the medical profession and licensed morticians. Pennsylvania, for example, has nearly complete registration with laws and regulations very similar to ours.

Opportunities for and incidents of conflict constantly occur between physicians and undertakers over death certificates and are often the fault of no one person. Changing practices and customs, the heavy demands on physicians, the increased number of requests for certified copies of death records, and the importance of these as a source of public health statistics are factors which contribute to the problem. Proper and



J. PAUL JONES
President of the Association
1948-49

prompt registration of each death is necessary to prevent embarrassment, needless clerical work, inconveniences and oftentimes hardship and privation to the decedent's family. The preparation of death certificates is a legal and professional responsibility which physicians and morticians must bear together. A death certificate is the product of joint action by these professions and without this working relationship little can be accomplished to improve the quality of mortality statistics and registration.

MASS HYSTERIA NEED NOT FOLLOW . ATOMIC BOMB EXPLOSION

If an atom bomb should fall on an American city, the population would be faced with the greatest emergency in its history. But, it is by no means true that the entire population would be wiped out, nor is it true that nothing could be done to help the survivors, according to Army Medical Corps officers who are conducting continuous study of the problem.

There is no presently known method of protecting those in the immediate neighborhood of an atomic bomb when it explodes. Nevertheless, since the Los Alamos experiment opened the Atomic Age, a great deal has been learned about mitigating the secondary effects of ionizing radiation and about protecting survivors who have received less than a lethal dose.

Many lives may be saved by widespread knowledge of therapeutic measures among physicians, and many more by a general understanding of preventive measures which can be taken by the general population.

In a talk made at the Pennsylvania University Hospital, Philadelphia, Col. James P. Cooney of the Army Medical Corps stressed the question of civilian morale. "Mr. and Mrs. America have been so frightened by the information they have received to date that, if a bomb were dropped on one of our cities tomorrow, mass hysteria would probably cause the unnecessary loss of many lives," Colonel Cooney said. "Mr. and Mrs. America have always been ready and willing to do what must be done in an emergency, and will, if properly instructed beforehand, do the right thing under this new kind of stress."

The real difference between ordinary high explosives and atom bombs is the enormous

amount of radiant energy produced by the latter—energy covering the whole range of wave lengths from heat waves to million-volt gamma waves.

The radiant energy may be divided into two types: ionizing and non-ionizing. The most important type of injury noted in Hiroshima and Nagasaki was, of course, that due to the ionizing component of the radiant energy from the bomb. Four known kinds of penetrating radiation can be expected within the immediate area of the blast. They are:

First, gamma radiation, which is essentially the same as x-ray. In an atom bomb explosion, however, these are 200,000,000 volt x-rays. They are lethal to anyone within roughly a mile of the blast, do serious damage to those as close as a mile-and-a-half, but their range is limited to approximately two miles. They move with the speed of light and most of them are produced at the instant of explosion.

Second, neutron beams, streams of heavy atomic particles shot out in all directions within a millionth of a second of the explosion. They have slightly less range than gamma rays. Both gamma rays and neutron beams passing through matter such as blood, bone or flesh produce extensive ionization of the atoms which make up body cells, which results in the breakdown of chemical bonds, causing profound alterations in cellular function. The fact that some kinds of cells, such as certain types of cancer cells, are affected more easily than others is the basis of radiation therapy. Whatever damage is done in this way is instantaneous, although observable symptoms may not appear for some time.

Neutron beams, however, have another effect, new in medical science. Neutrons are captured in elements contained in human cells, producing new elements which are themselves radioactive, and may remain so for a long time.

Third, are beta rays, streams of electrons which rarely penetrate the skin and whose effects will be found chiefly on the surface; and,

Fourth, are alpha particles, the nuclei of helium atoms, which do not get through the cornified, or horny tissue, layer of the skin. Because of their low penetrating power, it is not likely that either the beta rays or the

alpha particles resulting directly from the explosion will cause fatal injury.

It must be admitted, Army doctors say, that there is not much even a medical man can do about the immediate radiation from an atom bomb explosion. But in such an eventuality the immediate requirement will be for rescue work on a large scale and treatment for fractures, contusions, lacerations and burns. Here physicians and laymen will be on familiar ground. These kinds of injuries are the same whether produced by an atom bomb or a block buster; they involve no new principles.

Also, some aid may be given to victims of many sorts of secondary radiation dust spread by the explosion, radioactivity caused by neutron captured by atoms, or radioactive spray if the bomb is dropped in water. Against this secondary radiation, various safeguards can be provided, and it is essential that physicians be trained in safety measures. Army, Navy and Atomic Energy Commission scientists, as well as civilians interested in radiation therapy, are hard at work on the problem and substantial progress is being made. One important line of research is in the efficacy of blood transfusions, since it has been established that one of the most serious effects of radiation is damage to the blood-forming elements such as the bone marrow. A person tided over until normal function is resumed may be saved. A major function of the physician after such a disaster would be to act as public health officer. Most food in the affected area would not be unfit for consumption, but it would all have to be surveyed before it could safely be eaten. All the water in the region would probably contain radio-active isotopes, slow poison to anyone drinking it, but research is in progress on methods of removing radio-active substances. Obviously the usual boiling or chlorination would be useless. There is some indication that filtration and other methods can be developed.

Physicians would have a heavy responsibility in supervising the decontamination of not only food and water but of refugees by means of complete change of clothing, bathing, etc. This requires familiarity with the use of detecting instruments such as the Geiger counter, and a knowledge of the kinds of persistent radiation to be expected.

(People escaping from the area where a bomb has exploded may find their wearing apparel sufficiently radio-active to constitute a menace to others.) This problem has already come up in hospitals where patients are being treated with large amounts of radio-active material.

Armed Forces medical officers face an even greater responsibility than do civilian physicians since it may be necessary to send troops into a bombed area either for rescue work or on tactical operations. A series of intensive courses on the medical aspects of atomic explosion was instituted last May at the Army Medical Center, Washington, D. C. Nearly 700 doctors and scientists have been trained there in the fundamentals of radiation hazards, diagnosis and treatment. More than 50 medical schools throughout the country have sent representatives, many of whom are now setting up similar courses in their respective institutions.

Following the bombing of Hiroshima and Nagasaki, much was learned of what symptoms to expect, overt and latent, immediate and delayed. All the results will not be in for years, of course. Great publicity has been given to the possibility of gene mutations which might produce a high percentage of abnormal offspring in generations to come. However, Dr. Shields Warren, Assistant Professor of Pathology at the Harvard Medical School, recently told Army doctors attending the current basic science course at the Army Medical Center, Washington, D. C., that aberrations in the genes and ova of mammals produced by irradiation are usually lethal to the developing embryo, and consequently the result of such irradiation would probably be a higher rate of abortion and miscarriage rather than production of a race of monsters pictured in sensational prophecies.

Besides flash burns from enveloping hot gases, such as result from any powerful explosion, blisters similar to skin burns and sunburns are likely to appear on the skin of atom bomb victims. In Japan, burns and blisters appear to follow a definite pattern, showing up within five minutes on those close to the explosion. At nearly a mile away, they did not show for several hours, and at greater distances, up to about two miles, the appearance of burns and blisters were even longer delayed.

Of the superficial effects perhaps the most alarming is the falling out of the hair. While bound to cause a bad psychologic effect, it is due to superficial radiation and is not serious in itself. The hair will return if the patient has not received a lethal dose of radiation.

Immediately after a bomb blast those in the vicinity who escape immediate death from shock, burns or falling debris may appear to have suffered no ill effects at first. But, within a few hours, victims seriously affected will feel nauseated and start to vomit. This may pass in a day or so. But at the beginning of about the second week when the hair starts to fall out, the feeling of general malaise, experienced in the first few hours, may return accompanied by fever. There is likely to be bloody diarrhea. Examination will show that the white blood count has fallen to a very low level. Death may come very quickly, or there may be

anemia and general debility over a long period with eventual recovery.

Physicians must be prepared to expect such a syndrome and to take nothing for granted about the condition of the patient during the first few days.

There is a parallel in our experience with heavy bombing of cities from the air in World War II. This type of warfare was an innovation, and at first physicians had virtually no information concerning the effect of shock waves of that magnitude on the human body. Scores of people in the neighborhood of bursting bombs died, although they had apparently suffered no injuries. The knowledge of what could be done to save those people was acquired the hard way because medical science had not foreseen such a problem.

The threat of the atom bomb is at least now recognized and we have already a growing body of knowledge which can be mastered while an emergency is still remote.

TRANSACTIONS OF THE ASSOCIATION

1948 SESSION

(Concluded)

Last Day, Saturday, April 17

On call to order at 9:00 A. M. by the President, Mr. Owen Cooper, Executive Director, Mississippi Farm Bureau, Jackson, discussed The Functions of a Public Relations Program.

Whereupon, the Association, sitting as the Board of Health of the State of Alabama received the report of the Board of Censors, which was rendered by its Chairman, Dr. E. V. Caldwell of Huntsville.

THE SEVENTY-FOURTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORTS AS THE STATE BOARD OF MEDICAL EXAMINERS AND AS A STATE COMMITTEE OF PUBLIC HEALTH

E. V. Caldwell, M. D., Chairman

The State Board of Censors, in conformity to constitutional mandate, has the honor to submit to this Association its Seventy-Fourth Annual Report.

PART I

AS A STATE BOARD OF CENSORS

A RESOLUTION

Dr. Fred Wooten Wilkerson of Montgomery, Alabama, after a lingering illness, died April 24, 1947. Dr. Wilkerson, the son of a physician, was a graduate of the College of Physicians and Surgeons of Columbia University, and was a specialist in the field of internal medicine. His list of honors in national societies included membership in many and office in several. He was the Americal College of Physicians' Governor for the State of Alabama for many years.

Within the state he held nearly every office, culminating with his election as President of this Association 1943-1944. Prior to that time, for fourteen years, he was a member of the State Board of Censors and served with devotion and distinction during those trying years.

Resolved, That the State Medical Association, with a keen sense of loss to this body and to the people of Alabama, does hereby place itself on record as being deeply cognizant of the void left by the passing of our distinguished colleague; and be it further

Resolved, That this resolution be printed in full in the Journal of the Medical Association of the State of Alabama and that a copy be furnished his family.

THE PRESIDENT'S MESSAGE

The President's Message clearly indicates a broad scope of activity by the outgoing President and comprehensive realization and execution of the duties of the office of President of this Association. He has given freely of his time in attending meetings and in the study of the medical problems of the Association, and the Board heartily commends him for his fine year's work and devotion to the duties of his office.

In his Message, he pays tribute to the work of the State Board of Censors. He deals with official meetings, standing committees, appointments, medical ethics, the national blood program, the fifty year club, a state medical building, public relations, nursing problem, and closes his report with the following recommendations:

1. That the name of the Medical Care and Public Relations Committee be changed to Medical Service and Public Relations Committee, and that the President and Secretary of the Association be ex officio members of this Committee, and the other ten members of the Committee be so grouped that the terms of office of two shall end each year as follows: the term of Drs. Sledge and Chenault in 1948; Drs. Jordan and Grote in 1949; Drs. Gibson and Jones in 1950; Drs. Riggs and Mazyck in 1951; and Drs. Givhan and McNease in 1952. The Board so recommends.

2. That the Committee on Contract Practice, having completed its assignment, be discontinued. The Board so recommends.

3. That the present Committee on Accidents and Industrial Hygiene broaden its field to include all matters of industrial relations, contracts, and accidents, and be continued as the Committee on Industrial Medicine. The Board so recommends.

4. That the Committee on Blindness and Deafness be discontinued because the accomplishment of its work is limited and difficult. The Board feels that these afflictions are too serious to desist from trying to aid in assisting them, and therefore recommends non-concurrence in this recommendation.

5. Counsellor and Delegate Distribution: Inasmuch as this recommendation is included in the report of the Committee on the Study of Counsellor Distribution, the recommendation of the Board on this matter will be read in connection with the report of that Committee.

6. That the name of the Committee on Maternal and Infant Welfare be changed to Committee on Maternal and Child Health, in keeping with a bureau of the State Department of Health. The Board so recommends.

7. He recommends a standing Committee on Tuberculosis. The Board recommends that the incoming President appoint a committee of three members of the Association to be a committee under this name.

8. That the State Health Department should encourage these Committees to meet with it for conferences and cooperation in planning and operating the state programs pertaining to their Committees. The Board so recommends.

9. That any person appointed to a committee of the Association accept in writing his assignment and indicate his willingness and desire to work faithfully in this capacity, the President observing that one inactive committee member is a handicap to that Committee. The Board so recommends.

10. That the office of vice-president should not extend longer than four years in order not to overwork an efficient and willing member and to rotate the honor of the office, giving others opportunity to serve. The Board feels that inasmuch as the terms of vice-presidents expire every four years the Association has the opportunity, if it so desires, to elect a new man, but if the Association desires to reelect the same man for another term, it should have the right to do so. Therefore, the Board recommends the non-adoption of this recommendation.

The Association adopted the several recommendations of the Board relating to the President's Message.

REPORTS OF THE VICE-PRESIDENTS

The reports received from all four Vice-Presidents indicate that the work of the Vice-Presidents has been very much broadened during the last year. Greater effort has been put forth to stimulate society meetings, to analyze local needs, seek their solution from the standpoint of securing better medical care for the various sections of the state. These activities initiated through the four Vice-Presidents of the State Medical Association are paying great dividends in public relations and in improving medical care needs of the various sections of the state. The Board commends the earnest activities of the four Vice-Presidents referred to in their reports.

The Association concurred in the expression of the Board.

REPORT OF THE SECRETARY-TREASURER

The fact that eighty-nine per cent of the physicians in Alabama are members of the Association is gratifying, since it is felt that now, more than any other time, a united front is necessary. The loss by death of forty-four members, including one Life Counsellor, three Active Counsellors and two Counsellors-Elect, since our meeting last year is deeply mourned by the Association. The Life Counsellor, Dr. Fred W. Wilkerson, was also President of this Association in 1944. New members, however, exceeded the losses by twenty-three and today we have the largest membership in history.

The audit reveals that the Treasurer has correctly handled the finances of the Association and that its financial position is sound.

The Board recommends the approval of the report of the Secretary-Treasurer.

The recommendation was adopted.

REPORTS OF COMMITTEES

PUBLICATION

The Journal of the Association has continued to operate at a profit, although the margin was not great. The Board expresses appreciation to the contributors and to the editorial staff, and recommends approval of the report.

The report was approved.

MEDICAL CARE AND PUBLIC RELATIONS

This is a new movement of the State Medical Association of Alabama, and the Association desires to know more in detail of the work this Committee has done, and the financial foundation laid by the Association for its support and the objectives sought through its activities. Therefore, the Board thinks that the report of this Committee should be reread at this time to the Association with whatever explanatory remarks that may be necessary to clarify the certain phases of this movement:

"This is your new Committee appointed by you immediately after our 1947 meeting in Birmingham. The Committee was created by this Association for two reasons: First, to study carefully and use every means and agency possible to secure more adequate medical care for all the people of Alabama. Second, to use every possible avenue of approach to reach the people of our beloved state and keep them actively alerted in behalf of health and medical care.

"Your Committee is composed of a Chairman and ten members representing every section of our state. With one exception, the members have been diligent. We had our first, or organizational, meeting in New Orleans on October 24, 1947. We went to that distant city because the American Medical Association was holding a district meeting there of all the Southern States on medical service and public relations. We learned much. We then had an all morning meeting of our own and came to the following conclusions: As soon as practical and possible, a public relations agent should be secured on a full-time basis in order to reach the doctors of the state as a whole and the public at large; our prepayment plan for medical care in Alabama seems to be one of the most successful and satisfactory in comparison with others; expansion of the plan is limited by the need of more nurses; some change in legislation seems to be needed to liberalize the nurse-training program in order to provide more nurses and nursing care.

"We next had all day Sunday meetings in Montgomery on November 9, 1947, January 18, 1948, and March 14, 1948. At these meetings we gave careful consideration to all the problems of our agenda. We believe we have laid the foundation for a highly positive progressive program for the medical profession of Alabama.

"We are delighted to report that we have employed Mr. W. O. Dobbins, Jr., of Montgomery, Alabama, as our full-time medical care and public relations officer. He is to work for this Association under the guidance of this Committee, and with the sanction and approval of the Board of Censors. Mr. Dobbins, a native of Alabama, is 39 years old. He received his education at David-

son College and Cornell University. His philosophy of Government suits this Committee precisely. We sought Mr. Dobbins; he did not seek us. He is a gentleman and a scholar, and we are delighted with him. We shall present him to the Association during this meeting.

"Now in order that this Association may know all the details. The salary of the medical care and public relations director is to be \$6,000 per year. We expect to have \$15,000 per annum as a budget. This is to be provided by the Association from the increased dues of the members. We plan at an early date to have our own office space in Montgomery. At the meeting of this Association one year ago the sum of \$5,000 was appropriated from the general fund to this Committee in order to get this plan started. Only a small portion of this amount has been spent. We are assuming we shall be allowed to use this unexpended balance in getting this program inaugurated.

"In its Report on Public Relations to the Colorado State Medical Society, Raymond Rich Associates of New York City said, 'A public relations program must take into account not only community reactions to the medical profession but also points of view current within the profession itself. On the part of several of the first doctors interviewed,' continued the report, 'there was discovered a tendency to minimize the extent of lay dissatisfactions with the practice of medicine . . . As a matter of fact it seems safe to say that many, who accept in theory the need for augmented public relations activity, still are not ready to grant the full extent of the problem with which this activity must cope.'

"It may be then that one of the first duties of the Committee is to see that every member of the profession in Alabama appreciates fully what lies ahead of them unless there is unity of thought and action. The Medical Society of the State of Pennsylvania must share a similar view regarding the situation as it relates to its members for this is the opinion it has expressed: 'The newspaper, the radio, the motion picture, the poster, and the booklet are being used in our public relations program. However, they are only the tools . . . only the mechanical channels for reaching the public. They are important, but the attitude and ability of every doctor in our Society actually constitute the basis of public opinion. Every time you look at yourself in the mirror, you see the man who can do the best public relations job for you and your profession. Our public relations cannot be successfully promoted by any one individual or by any group hired to develop this program. This undertaking is a project in which each must do his part, working as a team to inform the people of our desire to be of service to them. There must be no vain hope that a public relations program will be a cover for shortcomings or a substitute for good works, but rather the hope that the straight-forward presentation of our service to the public will enlist their support of our activities?' And, in our opinion, that goes for Alabama, too."

The Board makes the following recommendations to the Association:

That it is the sense of this Association that the field of endeavor of the public relations officer of the State Medical Association shall be the creating of goodwill of the people through every avenue of approach to the people; to survey and assist in the getting of medical care and hospitals to all sections of the state as rapidly as means, circumstances and education will permit; the encouragement of health and medical care councils, through which to reach the people through various phases of activity in the state, and such other activities that will promote good public relations, better medical care, better hospital facilities, and a greater dispersment of doctors, nurses and health centers throughout the state.

It further recommends that the Medical Care and Public Relations Committee live within the \$15,000 if possible, raised by increased dues, for the coming year, but, if it is found that this cannot be done in setting up and beginning this work, that the remainder of the \$5,000, or any part of it, appropriated for its use last year shall be left to its disposal for another Association year.

The recommendations of the Board were adopted.

MATERNAL AND INFANT WELFARE

The report of this Committee will be published in full in the Journal of the Association and merits careful study on the part of physicians and health departments. The Committee has attempted to evaluate the maternal deaths and stillbirths in Alabama, and has selected the eleven counties in the state with the worst record. The problem in each of these counties and what is needed to be done are set out. A definite challenge to the medical profession and health department of each of these counties is contained in this report, which recommends a local committee to attack the problem.

The end of the Emergency Maternity and Infant Care Program is about in sight and the Board concurs in the feeling of the Committee that, although it served a war-time purpose, it has no place in civilian programs. The tribute to Dr. J. S. Hough, of the State Health Department, for an outstanding administrative job in handling this program is endorsed most heartily by the Board.

The Committee's recommendation in regard to "premature infant" is somewhat at variance with the standard accepted by the Bureau of the Census and by the Children's Bureau. These latter define a "premature infant" as one weighing less than five and one half pounds at birth.

It would appear to the Board that this simple definition could be readily utilized by all attendants at a birth, whereas the question of period of gestation and measurement could not be obtained by midwives. It is recommended therefore that this substitute definition be used and the Committee's report as a whole be adopted.

The Association adopted the recommendations of the Board.

CANCER CONTROL

This is one of the most active Committees of the Association, and this report should be care-

fully studied by all members. The recommendation, in regard to postgraduate courses and annual cancer seminars, is referred to the Committee on Postgraduate Study with the suggestion that the two Committees work together in setting up such courses. The formation of "detection centers" at certain points should be given serious consideration by county medical societies.

The Board repeats its endorsement of having each state clinic approved by the American College of Surgeons when that body is able to inspect the clinics. It also approves the selection of a director of the Cancer Division of the State Health Department whenever such a person can be found.

The Board recommends approval of this report.

The report was approved.

MENTAL HYGIENE

The passage of the National Mental Health Act by Congress has stimulated interest in the whole field of mental hygiene. The acute shortage of psychiatrists has prevented the inauguration of a program in this state with federal funds, but it is apparent that this Committee and the Health Department are working in close cooperation in planning for the future.

The Board recommends the adoption of the Committee's report.

The Association concurred in the Board's recommendation.

PREVENTION OF BLINDNESS AND DEAFNESS

The Committee has delved into the possibilities of getting established in Gadsden, Alabama, the first sight-saving class for those pupils needing special facilities. The School for the Blind at Talladega takes the severely handicapped, but there are a large number of children with defective vision not eligible for the Talladega institution, but needing special training and guidance. The Committee is to be commended for its activities in getting a program started in Alabama.

The Board recommends the adoption of the report of the Committee.

The report was adopted.

POSTGRADUATE STUDY

The first seminar held at Mobile was apparently quite successful, although the attendance was not as large as anticipated. The Board concurs in recommending that a similar seminar be held in the fall of this year. The Board concurs in the recommendation that the Secretary-Treasurer be authorized to pay the annual appropriation of \$1000 to the Medical College with the understanding that a duly itemized and certified statement of expenditures be made.

The Board approves the payment of expenses out of any balance in this fund for full-time employees of the Medical School who conduct programs for medical societies. It does not recommend such payment for men in private practice.

The Board recommends the adoption of the Committee's report.

The Association approved the Board's recommendation.

ACCIDENTS AND INDUSTRIAL HYGIENE

The Board concurs in the recommendation of the Committee that the present Workmen's Compensation Law should be amended to provide additional medical benefits. With the increase in the costs of medical care and hospitalization there should be a corresponding increase in benefits. The matter is referred to the Committee on Medical Care and Public Relations for action.

The matter was so referred.

PHYSICIAN-DRUGGIST RELATIONSHIPS

The annual barbecue of physicians and druggists in the Birmingham area was as usual an unqualified success. This type of friendly relationship is wholesome and to be commended.

The Board suggests approval of the Committee's report.

The report was approved.

CONTRACT PRACTICE

The work of this Committee is of particular importance due to the probability of the United Mine Workers setting up a program of medical care in Alabama for its members. The Board has carefully reviewed the By-Laws governing contract practice and concurs in the report of this Committee that present By-Laws are adequate.

The Board recommends the adoption of the report.

The Association concurred.

ANESTHESIOLOGY

The first report of this Committee indicates that it has made an excellent beginning. The promotion of good anesthesiology in every hospital is an absolute requisite to good medical practice. The Board commends the Committee for its first year's work and recommends the adoption of the report.

The recommendation of the Board was adopted.

DISTRIBUTION OF COUNSELLORS

The report of the Committee indicates that a thorough study has been made of the distribution of Counsellors, and that, with 157 Active and Life Counsellors as of April 1st, it does not appear that there should be any increase in numbers. The Committee further finds that, although there are certain inequalities in distribution, such inequalities are difficult to avoid if the smaller societies are to have representation.

The Board recommends the adoption of the Committee's report.

The report was adopted.

ASSOCIATION DUES

At our meeting last year the Association adopted the following recommendation of the Board:

"Therefore, the Board recommends that the dues, beginning at the next regular annual dues date, be raised to \$20.00 per member of the Association, exclusive of (1) those now absolved of dues by virtue of thirty years' consecutive state membership who shall never pay any more dues; (2) newly graduated medical men for not more

than five years dating from graduation; (3) county health officers and full-time medical employees of the State, the two latter groups to continue paying the present dues of \$5.00 per annum. The funds from this increased dues over and above dues now collected by the Association for members and Counsellors of the Association shall be allocated to the Committee on Medical Care and Public Relations to be used by the committee in activities approved by the Board of Censors."

The Board offers the following for the group in number three of the above recommendation of last year:

That full-time employees of the State and Federal Governments who are receiving less than \$5,000 per annum shall pay \$5.00. Those receiving \$5,000 and up per annum shall pay \$20.00. Counsellors shall pay \$25.00 to the Association.

The Board recommends that a copy of this article be placed in the hands of every county medical society of the state.

The recommendation of the Board was accepted by the Association.

PROPOSED CONTRACT BY THE VETERANS
ADMINISTRATION

Inasmuch as the Association has already endorsed the participating in this work as ethical for the last year, and the members of the Association at a county level have been doing this work on a fee basis through the Alabama Hospital Service Corporation and, therefore, has the work satisfactorily organized, at present, on a county level, the refusal of this Association to sign a contract on a state-wide basis would not handicap or delay this work to the detriment of the veterans.

Therefore, the Board recommends that the Association not sign this contract, but advise the Veterans Administration to treat with the doctors now listed in its office from a county level to carry on this worthy and necessary care of veterans; and if any member of this Association wishes to participate in this work, he should communicate with the Veterans Administration's Alabama office.

The Board's recommendation was adopted.

AMERICAN CANCER SOCIETY

The American Cancer Society has requested an opinion in regard to the establishment of a traveling cancer clinic. The Board approves the establishment of such a unit for educational purposes only, but is not at this time willing to recommend a traveling diagnostic unit.

The expression of the Board was adopted by the Association.

FEDERAL AGENCIES

Much of the financial support of the State and County Health Departments comes from federal funds administered through the U. S. Public Health Service and through the Children's Bureau. In addition to grants for general health work, tuberculosis, venereal disease, cancer, industrial hygiene, mental hygiene and maternal and child health programs, special projects, such

as the D. D. T. program against malaria and typhus, are largely federally financed. The Slossfield Health Center and the Maternal Care Program at Tuskegee are other examples of special projects.

Personnel has continued to be loaned to the state and helped fill the void of our own people.

The Tennessee Valley Authority cooperated in the health program in the Valley counties, not only through joint undertakings, but also through financial aid.

The Board expresses its appreciation of this financial and personnel aid.

The Association concurred in this expression of appreciation.

LEGISLATION

STATE

The Legislature met in 1947 and among other matters considered several items of importance to the Health Department and the medical profession. Chief among the laws passed were:

(1) The Henderson Act to provide for the examination of all residents of the state between the ages of thirteen and fifty for tuberculosis and an appropriation to inaugurate this program.

(2) Extension of the blood-test law providing for reexamination of counties where indicated.

(3) Enactment of a premarital law, requiring both parties to marriage to have a blood test for syphilis before marriage.

(4) The establishment of a commission, headed by the State Health Officer, to study the question of water pollution and to propose remedial measures.

(5) Increased appropriations for county health work, for blood testing, and for subsidy to tuberculosis sanatoria. The salary of the State Health Officer was also raised to a maximum of \$7,500 per annum.

(6) In addition, several bills that would have been detrimental to the medical profession were defeated.

(7) For a one-third contribution from the state towards hospital construction, a conditional appropriation not to exceed \$3,000,000 per year was voted, contingent on there being any funds in the general fund and contingent on the approval of the Governor. To date no funds have been made available, although numerous applications for hospitals are on file and could be built with state aid.

The Board appreciates the interest of the Legislature and is grateful for its constructive action. It is recommending, however, that in view of costs today, additional funds be made available for general health work and that the conditional nature of the hospital construction appropriation be changed to a definite appropriation.

It is recommended that the Committee on Medical Care and Public Relations of this Association be empowered to work with the State Health Officer in preparing and guiding legislation affecting medical matters.

The Association approved the Board's recommendation.

LEGISLATION RELATING TO PHYSICIANS IN SELECTIVE SERVICE

The following telegram has been received from the American Medical Association:

"Preliminary prints of legislation yet to be introduced to reactivate Selective Service will authorize special calls for physicians, dentists and veterinarians up to forty-five years of age. Council on National Emergency Medical Service has expressed strong opposition to this proposal on the ground that it is unnecessary in view of record of medicine in World War II in supplying needed medical personnel, that it is discriminatory in that the other needed scientific and technical personnel is not subject to similar call and that it reflects on patriotism of physicians by inferring they will not respond to an emergency. The Executive Committee of Board of Trustees has reaffirmed this opposition. Suggest you transmit views of your Association without delay to Senate Committee on Armed Services, Senator Chan Gurney, Chairman, to House Committee on Armed Services, Congressman Walter G. Andrews, Chairman, and to your Senators and Congressmen. Urgent."

The Board concurs in the recommendations of the American Medical Association that this organization go on record as opposing the drafting of physicians up to forty-five years of age under present conditions. It is further recommended that the views of this Association be transmitted to the Congressional Committees concerned and the federal representatives from the State of Alabama.

The Board's recommendations were adopted.

DOCTORS' ASSISTANTS

The question of opening schools for the training of doctor's assistants was brought before the State Board of Censors at its meeting in February by a subcommittee of the Committee on Medical Care and Public Relations, and the Board, after hearing this subcommittee and a lengthy discussion, requested the subcommittee from the Committee on Medical Care and Public Relations to investigate this question further and report back to the Board of Censors at this annual meeting. The following is the report of the subcommittee and a resolution offered by the Committee on Medical Care and Public Relations as a whole:

"The first meeting of the Committee appointed by the Board of Censors to study the question of training of doctors' assistants was held in the office of Dr. Roy Kracke, Birmingham, Alabama, on Monday, April 1, 1948 at 2 P. M.

"Committee members present: Dr. Roy R. Kracke, Chairman, presiding; Dr. A. C. Jackson, Jasper; Dr. J. P. Chapman, Selma; Dr. Frank W. Riggs, Montgomery; and Dr. E. L. Gibson, Enterprise.

"Meeting with the Committee for a discussion of the problem were the following: Mr. Clyde Sibley, Secretary of the Hospital Association of Alabama; Mr. I. J. Browder, Director of the University of Alabama Extension Center for Adult Education, Birmingham; Mrs. Nina Mae Basham, Educational Advisor to the State Board of Nurse Examiners and President of the Alabama League

of Nursing Education; Miss Catherine Corley, President of the Alabama State Nurses Association; Mrs. O. M. Strickland, President of the Practical Nurses for the State of Alabama; and Mrs. Elizabeth Gethin, Vice-President of the Alabama League of Nursing Education and Chairman of Recruitment for the State League of Nursing Education.

"The plan of training doctors' assistants was outlined to the group. It includes the recruitment of Alabama girls who are graduates of high schools, with the local doctors aiding in the selection of the girls; the establishment of approved schools of training with approval being granted by the Medical Association of the State of Alabama or its representatives; a period of training of one year, such training to include nursing procedures, simple laboratory and x-ray techniques and elementary office and bookkeeping procedure if possible; the awarding of suitable certificates upon satisfactory completion of the training, such certificates awarded by the Medical Association of Alabama; and that such trainee would not be licensed under the laws of Alabama, but simply be a medical worker certified by the Association to be competent to serve at any and all times as a doctor's assistant.

"A discussion of the problem of training doctors' assistants was carried out by this group in an amicable manner for a period of some two hours, following which the Committee went into executive session and passed resolutions which are transmitted below in this report. During the study of this problem, several important considerations were discussed.

"First, an evaluation of the nursing situation in Alabama revealed that there are slightly more than 5,000 licensed registered nurses in the state.

"Secondly, that there are slightly more than 700 licensed practical nurses in the state.

"Thirdly, that there is an unknown number of people who render nursing care who have had no training and who have no legal status with respect to licensure. This number is estimated by the nursing group to be many thousands.

"Our study further reveals that the program for recruitment not only in the field of nursing but practical nursing is seriously inadequate to meet the needs of the state. We were informed that there currently exist 400 vacancies in the schools of nursing of Alabama, few as they are. We are informed, further, that in spite of the fact that the program for training licensed practical nurses was started three years ago, only one such school has been activated, namely the one at Gadsden and it, too, has recruitment problems. In view of this situation our Committee came to the conclusion that the entire recruitment program for both nurses and practical nurses has essentially broken down and that young women in this state apparently cannot be induced to enter either of these categories in spite of the fact that the entrance requirement for practical nurses includes only an eighth grade education, followed by only one year of training. It is the opinion of the Committee, therefore, that nursing service, whatever its category, will steadily grow worse rather than grow better.

This consideration leads us to the belief that some different and new method will have to be employed in order to induce young women to enter this important field.

"The Committee discussed with the members of this conference the probable advantages and disadvantages in the training of doctors' assistants under the auspices of the Medical Association of the State of Alabama. It was admitted by the nursing group that the training of such a group would in no way interfere with the privileges of licensure or reciprocity with other states. The nursing group were of the opinion that the institution of such a program would seriously interfere with the recruitment of both practical nurses and nurses, and Mr. Sibley stated that this interference was already being felt to a considerable degree. Our Committee feels, however, that the recruitment program in both of those areas has already failed without respect to the question of training doctors' assistants.

"The nursing group were of the opinion that the training of doctors' assistants would tend to lower the standards of nursing care, but the Committee feels that this viewpoint cannot be reconciled with the current practice of training practical nurses from the eighth grade level, with a one year period of training.

"The Committee feels that a plan whereby young women are trained under the auspices of the Medical Association of Alabama, utilizing the term doctors' assistant, will have considerably more appeal in the recruitment program than attempts to recruit women for training as practical nurses. It is believed that there exists in the public psychology a feeling that a practical nurse is usually an elderly woman usually without means of support, who goes from home to home, nursing the sick, including the usual menial household tasks, such as cooking and housecleaning, and because of this, it will be difficult to recruit young women to enter training as a practical nurse. The Committee feels that the term doctor's assistant will have an appeal of glamor to young women and that recruitment problems will not be difficult.

"After a prolonged discussion of the entire question with the group represented, the Committee feels that no valid objections were brought forth to this plan of training. The basic question as to whether medical personnel should be trained by and remain under legal direction of the medical profession rather than the nursing profession did not arise during the course of the discussion.

"The Committee feels that since nurse recruitment has broken down, a new plan should be put into effect for the protection of the public, and further feels that this program will relieve the nursing profession of more menial and extraneous duties so that their time can more fully be devoted to nursing and thus help relieve the existing shortage of nursing personnel.

"Based upon the foregoing considerations, your Committee wishes to recommend to the Board of Censors the following:

1. It is the sense of this Committee, determined by a unanimous vote, that the plan of training

doctors' assistants under the auspices of the Medical Association of the State of Alabama, is feasible, practical and should be activated by the Association.

2. Your Committee recommends that this be presented to the Association for approval or disapproval.

3. In the event that it is approved, it is recommended that a standing committee on the training of doctors' assistants be appointed and that this committee be empowered to proceed with the development of the plan, including such matters as its financing, the establishment of standards, the institution and approval of training schools, the proper curricular procedure for such schools, the requirements of admission of students, mechanics of recruitment programs, etc.

"The meeting was adjourned at 4:30 P. M."

A RESOLUTION

"WHEREAS, There exists in Alabama a definite need for a group of individuals trained to act as Doctors' Assistants, to be made familiar with the fundamentals of patient care, simple laboratory procedures, and ordinary radiographic techniques, and possessed with a knowledge of secretarial procedures, and

"WHEREAS, Hospital facilities are available in Alabama for the training of such Doctors' Assistants, therefore be it

"Resolved, That the Committee on Medical Care and Public Relations of the Association recommend to the State Board of Censors that earnest consideration be given the establishment of training courses for Doctors' Assistants in hospitals to be approved by the State Board of Censors, and under the direction of a committee of the Association appointed by its President, in keeping with ordinance of the Association governing appointment of committees."

After a lengthy discussion, the Board feels that the best interest of the sick of this state would be served to the greatest extent and with greater harmony and permanency if all groups in the state interested in the care of the sick should participate in the settlement of this very grave problem. Therefore, the Board recommends that the Committee on Medical Care and Public Relations, through this same subcommittee, request the State Nurses Association to appoint a committee to study jointly this problem further for ample solution and recommendation to the State Board of Censors at a later date; the Board, in turn, to submit it to the next meeting of the Association for final settlement.

The recommendation of the Board was adopted by the Association.

GROUP INSURANCE

In 1940 the Commercial Casualty Insurance Company offered a disability contract to the members of the Association as a group, under which a large number of the members of the State Medical Association were insured. This insurance company now offers the members of the Association an increase of benefits if fifty per cent of the Association who are not now insured will, within sixty days from this date, apply for

insurance. The increased benefits offered are:

1. The weekly accident indemnity will be increased from a period of fifty-two weeks to five years;

2. Heretofore sickness indemnity began with the eighth day of disability. The new proposal is that if you are required to enter a hospital during the first week of your sickness, your indemnity will begin with the first day of confinement.

If their proposition is met, these two additional benefits will accrue to those holding policies as well as those who come in under this proposition. The Board brings this matter to the attention of the Association as a matter of information without recommendation. Any further information on this subject can be obtained from the Secretary of the Association by those who are interested.

The Association received, as information, the foregoing advice regarding group insurance.

ILLEGALS

Responding to repeated requests annually for several years that something be done about illegals in the state, the Board took the matter under advisement, and it was decided to ask the Attorney General whether or not the State Board of Medical Examiners had authority to institute proceedings against illegals under the present statutes. The Attorney General's office has given us an opinion that it is within the scope of authority of the State Board of Medical Examiners to proceed against illegal practitioners, and it is the sense of the Board to bring this matter before the Association as a matter of information. Further, that the Board is willing to assume this responsibility if means are made available to secure proper investigators and attorneys for successfully prosecuting illegal practitioners as the cases come up. The Board therefore recommends that the expense of these prosecutions from the state level be paid out of the funds collected and assigned to the Public Relations Committee.

The Board's recommendation was concurred in by the Association.

APPEAL OF DR. WALLACE MARSHALL FROM MOBILE COUNTY

The Board heard the evidence in the case of Dr. Wallace Marshall at a special meeting in Montgomery August 20, 1947. All members of the Board were present, and, after hearing the evidence in the case, the Board recommends that the Association concur in the action of the Mobile County Medical Society in denying membership to Dr. Marshall.

The Board's recommendation was concurred in by the Association.

COMPLAINT OF DR. H. S. J. WALKER AGAINST DR. WALTER S. PARSONS

Dr. Parsons was licensed by the Board, after written examination, and made application to the Mobile County Medical Society for membership. He was blackballed and an appeal made for him

by a member of the Mobile County Society to the State Medical Association. At a legal hearing he was ordered enrolled in the Mobile County Medical Society by the Association, which was done. Dr. H. S. J. Walker, a member of the Mobile County Medical Society, in writing requested the Board to cancel Dr. Parsons' license and remove him from the Mobile County Medical Society on the grounds that he falsified his credentials. The Board took the case under advisement at its February 4, 1948 meeting, at which time Dr. Parsons appeared, and he was acquainted with the charges of Dr. Walker, and was given an opportunity by the Board to straighten out the apparent discrepancies in his credentials, and his case was deferred until the April meeting for final action. Dr. Parsons furnished the Board a sworn statement as to dates in his education and internship, with photostatic documentary proof as to the correctness of his sworn statement to the Board at its meeting April 15th, at which time Dr. Walker appeared, with others interested, and was given an opportunity to substantiate his charges. The Board feels that the Association is entitled to this resume' and makes the following report to the Association on the final disposition of this case:

Whereas, the complaint filed by Dr. H. S. J. Walker against Dr. Walter S. Parsons has been thoroughly investigated by this Board, during which time the Board had testimony, in person, from Dr. Parsons at a meeting of the Board in Montgomery February 4, 1948, and has been furnished by Dr. Parsons with a sworn statement, under date of April 6, 1948, accompanied by documentary evidence in support thereof, as to his medical education and experience; and has given the complainant, Dr. Walker, and his associates, members of the Medical Society of Mobile County, who appeared with him, a hearing before this Board April 15, 1948, at which time Dr. Walker admitted he knew nothing against Dr. Parsons' character, and while still contending that dates on his credentials were impossible, he couldn't say they constituted legal fraud. Therefore, it was moved that it is the sense of this Board that irregularities, if any, as to the length and time of Dr. Parsons' internship, included in his application filed with this Board to write its examination, were not for the purpose of attempting to defraud this Board, especially in view of the fact that the question of whether or not he had served an internship was a matter wholly foreign to his qualifications to write our examination, that such irregularities, if any, have been subsequently explained by Dr. Parsons to the satisfaction of this Board, and it voted unanimously that the complaint against Dr. Parsons be dropped by this Board without further action, and that Dr. Parsons and Dr. Walker be notified by the Secretary of this action on the part of the Board.

The case was discussed by Dr. Walker and the Chairman of the Board, whereupon, on motion by Dr. E. S. Sledge, seconded by Dr. C. T. Acker, the Association sustained the Board in its action on the matter.

PROPOSED CONSTITUTIONAL AMENDMENTS TO ARTICLE IV, SECTION 4

In his Message to the Association in 1946 President Walter Scott recommended that the Constitution be amended to make it permissible for all members in good standing in a county medical society to hold office in the Association. This proposal, relating to eligibility for office, has been before the Association in one form or another a number of times. The pertinent portion of the Constitution (Section 4 of Article IV) now reads as follows:

"All members who have been members in good standing of a county medical society in Alabama for the five consecutive years immediately preceding any election to fill vacancies in the several offices of the Association shall be eligible to election to the office of president and vice-president."

Prior to 1922 only Counsellors were eligible for the offices of the Association. In that year it was proposed to open all offices of the Association to members who had been identified with the organization for five years, but the Association in its judgment saw fit to extend the privilege to the presidency and vice-presidencies only. It is believed that it would be well to recall the comments the Board made at that time:

"The plan of organization of the State Medical Association has for its main purpose the furnishing of a State Board of Health to the State of Alabama. As a medical organization its objects are to improve the standards of medical education, the ethical standards of the medical profession and the cordial relations of the doctors of the State. A far simpler plan of organization would meet all the needs of the medical profession as such, but if it shall function as the State Board of Health, then the organization must be more stable. It must have an established policy with which the citizenship of Alabama is conversant. That policy must be uniform and consistent and not subject to changes provoked by emotional propaganda advanced by untried leaders. The College of Counsellors is the element in the organization which gives it stability. Distinguished jurists and legislators of the State have frequently said that without the College of Counsellors the State Medical Association could not be trusted with the grave responsibility of administering the health laws of the State. In other words, if the membership of the annual business meeting of the Association was composed of an aggregation of individual members, each voting his individual opinion it would be an irresponsible organization. The College of Counsellors, whose members hold office for a term of seven years and are distributed equitably among the several congressional districts, meeting with the Delegates who represent the organized medical profession of the several counties of the State, does form a stable organization with which the State Legislature is justified in treating. Any movement which would have a tendency to bring about a disintegration of the College of Counsellors or in any manner impair its integrity as a component part of the State Association should not be entertained."

Now, as then, however, there is a difference of opinion as to the effect such a constitutional amendment would have upon the College of Counsellors. Said the Board in 1922: "The earnestness and sincerity of those holding to the two different viewpoints is not open to debate. Nevertheless the Board calls the attention of the advocates of these two different viewpoints to the fact that when the stability of the Association is any wise impaired, the Legislature would not be justified in retaining it as its Board of Health."

The quarter century that has intervened since these words were written find the usefulness of the organization unimpaired under the present constitutional provision. One wonders, then, in the face of unsettled conditions in almost all other lines of endeavor, whether the time is opportune to alter Section 4 of Article IV. In the opinion of the Board it is not. It is recommended, therefore, as a substitute for the proposal made by President Scott, that Section 4 of Article IV be amended to read as follows:

"All members who have been members in good standing of a county medical society in Alabama for five consecutive years immediately preceding any election to fill vacancies in the several offices of the Association be eligible to all offices except that of Censor."

"That all clauses, paragraphs, or parts of clauses or paragraphs in the Constitution and By-Laws of the Medical Association of the State of Alabama in conflict therewith are hereby repealed."

The Board feels that the College of Counsellors is a roster of seasoned men who have demonstrated over a period of years a steadfast interest in a knowledge of the fundamental structure and policy and function of the Association and therefore is the group from which the Board membership should be drawn.

Difference of opinion prevailed regarding the limitation of membership on the Board of Censors to those who had been chosen Counsellors. At the same time, the consensus seemed to be in favor of a five-year waiting period before one would be eligible for office. However, in view of the fact that such period of waiting had not been a part of the recommendation relating to the proposed constitutional amendment, being in effect a new proposal, it was held that the matter would have to be carried over until the meeting of 1948, and it was so ordered.

The Board of Censors still feels that the seriousness of the work coming before the Board of Censors is such that its membership should be drawn from the College of Counsellors, whose services have been recognized by their associates in their selection as Counsellors in the Association.

Therefore it recommends adoption of the substitute for Dr. Scott's proposed amendment.

By a majority vote, the Board's substitute for Dr. Scott's proposed amendment was rejected.

The question then reverted to the amendment itself (that all members of the Association who have been members in good standing of a county medical society in Alabama for a period of five years shall be eligible to election to any elective

office in the Association), requiring for adoption not less than a two-thirds vote, which it failed to receive, 58 Counsellors and Delegates having voted in the affirmative and 49 in the negative.

TO ARTICLE VIII, SECTION 4

The following amendment was offered by Dr. J. F. Alison and Dr. J. H. Little last year and carried over for action this year:

"Officers shall be elected by ballot with nomination from the floor. A majority of all votes cast shall be necessary for election. Every officer shall continue in office until his successor is duly elected and installed."

The Board recommends the adoption of this proposed amendment to Section 4 of Article VIII.

On roll call this amendment to the Constitution of the Association was adopted without a dissenting vote.

TO ARTICLE VIII, SECTION 2

The following amendment was offered by Dr. J. F. Alison and Dr. J. H. Little last year and carried over for action this year:

"The president shall be elected for one year; the vice-presidents, for four years, in such way as that one vacancy only will occur annually by expiration of official term; the secretary, for five years; the treasurer for five years; the censors, for five years, not to succeed themselves, in such way that two vacancies will occur annually by expiration of official term."

The Board feels that the Constitution now provides for two censors' terms of five years to expire every year, and the Association has the opportunity and right to elect new members or reelect the member whose term so expires.

If the person, whose term of office expires, has proven his devotion to the Association and to the Board to the extent that he appears to the Association to be the best man to be on the Board another term, the Association should not be barred by an amendment from electing him to succeed himself.

The Board is deeply impressed by the seriousness of the work that is the duty of the Board to consider; that the Board needs older as well as younger men in its membership, but that neither the older or the younger member should be barred by an amendment from being reelected to the Board if the Delegates and Counsellors should think they were the best men for the place.

Therefore the Board recommends the non-adoption of this amendment.

It was moved by Dr. Grote, seconded by Dr. Rucker, that the recommendation of the Board be concurred in, and, by a show of hands, the motion prevailed. However, since a proposed amendment to the Constitution was involved, there was doubt that the question could be so disposed of. Therefore, the Secretary was instructed to call the roll, with the result that 82 Counsellors and Delegates voted against the amendment, thus defeating it, only seven having voted in favor of it.

PROPOSED AMENDMENT TO AN ORDINANCE OF THE ASSOCIATION

The following is a proposed amendment to Section 4 of the Ordinance of the Association entitled

Sessions of the Association and Order of Business Therein made last year by Dr. J. F. Alison and Dr. J. H. Little:

"That the last day of the session shall be devoted to the transaction of the business of the Association, the report of the Board of Censors, a copy of which shall be furnished the Delegates and Counsellors at the meeting; the revision of the rolls and the election of officers."

In order to comply with this amendment it would be necessary to cut stencils and mimeograph at least three hundred copies of the reports of the State Board of Censors, State Board of Medical Examiners, and the State Health Officer. This would have to be accomplished during the night prior to the business meeting, which would be a physical impossibility. Therefore, the Board recommends non-adoption of this amendment.

By a show of hands, the recommendation of the Board was concurred in by the Association.

RESOLUTIONS

INTRODUCED BY COMMITTEE ON MEDICAL CARE AND PUBLIC RELATIONS

"WHEREAS, There has been considerable national publicity regarding rebates, kickbacks and commissions in medical practice; and

"WHEREAS, For a physician 'to give or receive a commission by whatever term it may be called or under any guise or pretext whatsoever' is a violation of the Principles of Medical Ethics to which physicians subscribe; and

"WHEREAS, This Association has, by action recorded in its Constitution and By-Laws, condemned such practice as unethical and degrading to the profession, and in that action has called upon medical societies of counties in which rumors of rebates gain circulation to institute a thorough investigation and to punish those found guilty of such conduct, therefore be it

"Resolved, That this Association reaffirm its position as set forth above and that it call upon all its members to protect the good name of the profession by scrupulously refusing to be a party to a transaction in which a rebate, kickback or commission is involved."

The Board calls attention to Article 16 of the Constitution of County Medical Societies dealing with ethics, which reads as follows:

"Section 1. The society accepts for the ethical guidance of its members the 'Principles of Ethics' adopted by the American Medical Association, but should any modification of said principles be made by the Association, the society obligates itself to abide by such modification."

Under the section on ethics of the Code of Ethics of the American Medical Association is the following:

"It is unprofessional to accept rebates on prescriptions or appliances, or perquisites from attendants who aid in the care of patients."

The Board concurs in the spirit of the resolution, but recommends to the Association that it go further than the resolution by strongly condemning any practice against the principles of the two references quoted above.

The recommendation of the Board was adopted by the Association.

FROM THE
ALABAMA SOCIETY OF ANESTHESIOLOGISTS
ALABAMA ASSOCIATION OF PATHOLOGISTS
ALABAMA RADIOLOGICAL SOCIETY

To: The Board of Censors
The Medical Association of
the State of Alabama

Gentlemen:

There seems some question in official quarters as to whether the present state law of Alabama includes the diagnostic specialties as the practice of medicine. This has been true in many states because of the more recent development of these branches of medicine.

Steps are being taken in various states to remedy the situation, and following the example and text of resolutions adopted by the House of Delegates of the American Medical Association and by the Southern Medical Association, and by various state medical associations at their more recent meetings, we submit for your consideration the following resolutions:

"BECAUSE certain divisions in the practice of medicine are of relatively recent development, and in the interest of their furtherance, be it

"Resolved, That diagnostic internal medicine, clinical pathology, pathologic anatomy, diagnostic radiology, therapeutic radiology, and anesthesiology are an integral part of the practice of medicine; and be it further

"Resolved, That the activities of these specialties shall be directly under the control of and shall be directed by duly licensed physicians in the State of Alabama."

The Board feels that this matter has such far reaching implications and affects seriously so many groups and hospitals that it would be unwise to recommend its adoption without the fullest study and deepest consideration, which this Board has not had sufficient time to do. Therefore, it recommends that this matter be deferred another year for study.

The recommendation was adopted, as was Part I of the Board's report.

PART II

REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

In this field of its activity the Board submits the following statistical report for 1947:

Certificates of qualification issued physicians. 158

(a) Physicians passing examinations Jan 21-23, '47	52
(1) Certificates issued	37
(2) To be issued after satisfactory internships	15
(b) Physicians passing examinations June 24-26, '47	46
(1) Certificates issued	5
(2) To be issued after satisfactory internships	41
(c) Certificates issued after completion of internships during 1947	3
(d) Physicians reinstated—new certificates issued	2
(e) Physician granted privilege to reregister for narcotic stamp	1

(f) Physicians granted reciprocity	110
(g) Diplomates of the National Board of Medical Examiners licensed	3
(h) Chiroprody renewal licenses issued	28

**CERTIFICATES OF QUALIFICATION
ISSUED MARCH 18, 1947**

Buck, Gray C., Jr.	Mears, Thomas W.
Bushnell, James J.	Mowry, Robert W.
Butler, Joseph L.	Mudd, Joseph P., Jr.
Cowart, Norton E.*	Nolen, Percy
Edwards, William S., III	Ormrod, John K. T.
Emfinger, Orizaba	Owens, Thomas M.
French, James H.	Payne, Edmund C., Jr.
Friday, William C.	Reames, George E.
Gaines, John L.	Relfe, Conyers B.
Gaston, Charles W.	Richardson, Wm. R.
Goldberg, Stanley Z.	Robertson, James D.
Green, Robert L., Jr.	Sewell, Joseph W., Jr.
Gressler, Herman G.**	Simpson, Sam T.
Hamilton, Paul K., Jr.	Stough, John Alan
Harris, Edward C., Jr.	Strickland, John J.
Henry, Richard	Walker, James H.
Hornsby, Aubrey T.	Wiley, Thomas M., Jr.
James, Charles L.***	Wood, John Edwin
McVay, Leon V., Jr.	

**CERTIFICATES TO BE ISSUED AFTER ONE YEAR
OF SATISFACTORY INTERNSHIP**

Allgood, Homer W.	Kessler, William H.
Bell, Palmer H.	McDonald, William B.
Bryan, Robert M.	Pepper, Harold R.
Burnett, James M.	Pierson, Malcolm G.
Crook, Donald H.	Potter, Maxwell G.
Folsom, Walter C.	Praytor, Hugh B., Jr.
Gilbert, Marvin	Wiley, Homer Paul
Hall, David M.	

**CERTIFICATES OF QUALIFICATION ISSUED
AUGUST 20, 1947**

Blanton, Claiborne, Jr.	†Rham, Charles C.
Clayton, Orville W.	Simpson, William H.
MacGuire, Hugh C.	†Osteopath

**CERTIFICATES TO BE ISSUED AFTER ONE YEAR
OF SATISFACTORY INTERNSHIP**

Beckham, Louis E., Jr.	Kennedy, Hughes, III
Branyon, Edgar W., Jr.	Kirkland, T. N., Jr.
Bray, Maury B., Jr.	Lightfoot, Phillip M., Jr.
Carlton, Lawrence E.	Livingston, Wiley K.
Carter, John J.	Lofton, Joseph E.
Chisolm, Jack T.	Moseley, John H.
Christopher, Ralph C., Jr.	Paine, Mannie D., Jr.
Davis, Joseph S.	Parker, Mervel V.
Davis, Samuel D., Jr.	Patton, Ira B.
Denson, Joe W.	Powell, Harry C., Jr.
Dudley, Edward A., Jr.	Rittelmeyer, L. F., Jr.
Elrod, Bruce A.	Vaughn, Max E.
Findley, Herbert L., Jr.	Wadeson, R. W., Jr.
Gilliland, Mary B.	Waldo, Frank Bell
Gilmore, Keith W.	Waldrop, Edwin G.
Hagood, Martha	Waldrop, Sam D.
Haisten, Maurice W.	Welty, Myron J.
Hamilton, Virginia D.	Whiting, James A.
Harris, John W.	Wimberley, N. A., Jr.
Hawkins, William F.	Wingard, Christian, Jr.
Jones, James M., Jr.	

*Certificate issued July 1, 1947

**Mechanotherapy

***Certificate issued June 1, 1947

**CERTIFICATES ISSUED MARCH 1946 APPLICANTS
COMPLETING INTERNSHIPS DURING 1947**

Bidgood, Willis D.	Gordon, Eugene W.
Crum, William B.	

PHYSICIANS REINSTATED

Fussell, J. A., New	Harmon, J. S., Elmore
Brocton	

**PHYSICIANS GRANTED PRIVILEGE OF REREGISTER-
ING FOR NARCOTIC STAMP**

Hughes, Brady A., Birmingham

**RECIPROCITY APPLICANTS RECEIVED DURING
THE CALENDAR YEAR OF 1947**

Accinno, Mario A.—Ill.	Apr. 13, '47
Adams, Harry A.—Pa.	May 1, '47
Ball, William H.—Cal.	May 1, '47
Banton, Howard S., Jr.—Mo.	Feb. 3, '47
Bartel, Robert M.—Iowa	Mar. 26, '47
Bashinsky, Leo M.—Tenn.	Feb. 21, '47
Becker, Charles F.—La.	Feb. 7, '47
Bell, John Mac, Jr.—Ga.	Apr., 8, '47
Bleidt, Leonard C.—Ark.	Nov. 7, '47
Brannen, Ollie C.—Ga.	Apr. 13, '47
Brock, Jack—Ohio	Oct. 1, '47
Brown, Harry Gad—Tenn.	Feb. 24, '47
Brown, Nelson L.—La.	Dec. 19, '47
Brunt, Harry H., Jr.—Pa.	Aug. 5, '47
Buerger, Claude L., Jr.—La.	Oct. 2, '47
Burnham, Charles J.—Miss.	July 7, '47
Burson, Elkanah G., Jr.—La.	Feb. 3, '47
Caldwell, Edward E.—Tenn.	May 26, '47
Chambliss, James C., Jr.—Tenn.	July 7, '47
Cheraskin, Emanuel—Ohio	Aug. 12, '47
Clark, Benjamin P.—Okla.	Mar. 10, '47
Cobb, David H.—Texas	Apr. 13, '47
Collings, Gilbeart H., Jr.—N. C.	June 2, '47
Currie, Howard F.—La.	Aug. 20, '47
Davis, Harwell, II—S. C.	Apr. 13, '47
Davis, James E.—Miss.	July 14, '47
Day, Charles H.—La.	Sept. 12, '47
Denton, Robert O.—La.	May 12, '47
Dorrough, Bernell F.—Mo.	July 14, '47
Dumas, James F.—La.	Mar. 10, '47
Edwards, Thomas E.—Tenn.	June 13, '47
Elliott, Vance J.—Iowa	Oct. 17, '47
Ellis, Bert Hale—Ky.	Apr. 28, '47
Estep, John H.—Ga.	Apr. 13, '47
Evans, John W., Jr.—Tenn.	Sept. 1, '47
Fowlkes, Thomas C.—Va.	June 27, '47
Francis, James C.—N. B. M. E.	May 8, '47
Fraser, Lewis E.—Tenn.	June 9, '47
Freas, Samuel H.—Tenn.	Oct. 20, '47
Friday, Walter C.—Miss.	Dec. 2, '47
Garrett, Richard M.—Md.	May 16, '47
Gilliand, Harold L.—Tenn.	May 1, '47
Ginther, Clarke E.—Mo.	Oct. 1, '47
Giscombe, Cecil C., Jr.—Tenn.	Jan. 6, '47
Gladden, Joseph R.—Ga.	Dec. 2, '47
Goldberg, Norman L.—Tenn.	Nov. 13, '47
Gwin, Judson C.—La.	July 14, '47
Hammons, Junius—Kan.	Oct. 20, '47
Hardie, George A.—Va.	Jan. 6, '47
Harrison, Walton W.—Tenn.	Dec. 23, '47
Havron, James B.—La.	Aug. 20, '47
Henry, Nelson W.—Ill.	May 19, '47
Hinman, Edgar H.—La.	June 13, '47
Hobbs, R. J. W.—N. C.	July 17, '47
Holleman, Jeremiah H.—Miss.	May 21, '47

Hood, Jo Rogers—Ill.	Aug. 20, '47	Crowley, Gentry Ballew	Huntsville
Jabour, Ernest P.—Tenn.	Mar. 28, '47	Daniels, John Edgar	Montgomery
Jackson, A. F., Jr.—La.	July 14, '47	Lavis, Edith M.	Birmingham
Jackson, Truett—Tenn.	July 14, '47	DeViso, Viola	Birmingham
Jones, William H.—Miss.	Apr. 22, '47	Draper, William Loyt	Birmingham
Kahn, Stanley S.—Mo.	Mar. 19, '47	Edwards, Charles Mortimer	Birmingham
Kendrick, James Evans—Ga.	Mar. 7, '47	Leighty, Fred Grandville	Birmingham
King, H. A. T.—N. C.	Oct. 1, '47	Miller, John	Mobile
King, William D.—Texas	Oct. 7, '47	Oxford, Herman R. A.	Tuscaloosa
Knowles, Clyde M., Jr.—Del.	Apr. 13, '47	Pearson, Joe Price	Birmingham
Ladas, Harilaos E.—Wis.	Aug. 20, '47	Peterson, Bessie Cook	Birmingham
Lesser, Leonard I.—Ga.	Feb. 24, '47	Plevine, Erich Herman	Gadsden
Lingo, John K.—Va.	July 14, '47	Riccio, Peter Domenick	Bridgeport, Conn.
Lockard, Blanche—Tenn.	Nov. 7, '47	Rollings, Harry Hartupe'e	Montgomery
Long, Wilmer N., Jr.—Md.	Apr. 8, '47	Sealy, Ariel Lewis	Montgomery
Maddox, Edward A., Jr.—Mo.	Sept. 12, '47	Sealy, Elizabeth Pepperman	Montgomery
McAvoy, Harry D.—Ohio	Jan. 20, '47	Silverman, Isidor	Birmingham
McCall, William W.—La.	Aug. 14, '47	White, Juddie Benjamin	Birmingham
McCoy, David A.—Cal.	Feb. 5, '47	Wright, Thomas Leolin	Selma
Mears, Frank K., Jr.—Pa.	July 9, '47		
Melton, William H.—Tenn.	June 27, '47	<i>Part II of the Board's report was approved.</i>	
Michaelson, Julius—La.	Apr. 13, '47		
Morton, Edwin D.—Pa.	Mar. 7, '47		
Moss, John E.—Tenn.	Jan. 27, '47		
Moss, Philip B., Jr.—La.	June 26, '47		
Mullendore, M. M.—Miss.	Apr. 13, '47		
Nash, James C., Jr.—Miss.	July 25, '47		
Odess, John S.—Tenn.	June 9, '47		
Paul, Thomas Otis—Okla.	Apr. 28, '47		
Porter, Charles E.—Ohio	May 20, '47		
Pritchett, Thomas L., Jr.—Ga.	Oct. 20, '47		
Ray, James C.—Mo.	Mar. 13, '47		
Ray, Weldon—Mo.	Feb. 3, '47		
Reynolds, Dallas B.—Tenn.	Oct. 24, '47		
Riser, Abner B.—Tenn.	Mar. 3, '47		
Roberts, Edward H.—Ill.	Feb. 5, '47		
Royer, Don John—Ohio	Oct. 7, '47		
Savage, Charles H., Jr.—La.	Jan. 13, '47		
Shamblin, Joseph—La.	Nov. 7, '47		
Stigler, Stephen L.—Miss.	Nov. 13, '47		
Stinson, Roy F., Jr.—Ga.	Aug. 12, '47		
Strandell, Everett L.—Minn.	Apr. 23, '47		
Suit, Ivory—Miss.	Jan. 6, '47		
Sullivan, Claude C.—Pa.	Dec. 29, '47		
Tally, William J.—La.	Oct. 1, '47		
Tate, James Knox, III—La.	Dec. 12, '47		
Thompson, John L., Jr.—La.	May 19, '47		
Upchurch, Samuel E.—Tenn.	Jan. 11, '47		
Vandegrift, Harvey N.—N. B. M. E.	July 23, '47		
Vanhoof, John F.—La.	Jan. 13, '47		
Warren, Palmer H.—Ky.	Mar. 6, '47		
Watson, John B.—N. B. M. E.	June 27, '47		
Williams, James C.—Mo.	July 28, '47		
Williams, Thomas K., Jr.—Miss.	Dec. 8, '47		
Williford, Robert F.—Mo.	Oct. 1, '47		
Witt, Edwin Thomas—Tenn.	June 26, '47		
Young, Jack Rufus—La.	July 31, '47		
Zick, Luther H.—Mich.	Aug. 4, '47		

CHIROPODY RENEWAL LICENSES ISSUED FOR 1948

AuCoin, William John	Mobile
Benitez, George W.	Birmingham
Blotzer, Ellen Louise	Mobile
Blotzer, John Sheldon	Mobile
Carlisle, Alexander Randolph	Montgomery
Carter, Harry Shipley	Florence
Clark, George Elwood	Birmingham
Cooper, John Marvin	Birmingham
Crowley, Coy Hiram	Mobile

PART III

REPORT OF THE BOARD OF CENSORS AS A
STATE COMMITTEE OF PUBLIC HEALTH

D. G. Gill, M. D.

State Health Officer

PREFACE

It is my pleasant privilege to tell you that 1947 was a satisfactory year in public health in Alabama. As you will learn later in this report, the state's general death rate was, with only two exceptions, lower than at any previous time in 36 years. The birth rate last year was, without any exceptions whatever, the highest on record. The excellent showing made in infant mortality in 1946 was maintained. The 1947 picture was even brighter as far as neonatal deaths were concerned, for the neonatal death rate showed a slight, but genuine, decline. Although the 1947 maternal mortality rate was slightly above the 1946 rate, it was substantially under the five-year average. Even though the 1947 stillbirth rate appears to have been a shade higher than the 1946 rate (as a result perhaps of better reporting rather than of an actual increase in the number of stillbirths in relation to total births), last year's stillbirth rate was substantially under the five-year average.

In general, the major non-communicable diseases like heart disease, intracranial lesions and cancer were more destructive of human life last year than before. But this fact, I am sure you will agree, is due more to the stress and strain of modern living than to a failure of the public health agencies to discharge their responsibilities properly. For all of us who have been battling syphilis for all these years, often against heavy odds there is special encouragement in the mortality reports, for they show that the syphilis death rate dropped last year to a 20-year low. The over-all mortality picture of the other communicable diseases is also a source of much satisfaction. This is all the greater because last year was about the time the postwar upsurge in these diseases was expected. We hope it has not

merely been postponed. We hope, and believe, it has been avoided completely.

This pleasant mortality picture is of course only a reflection of a good state of health enjoyed by our people as a whole. There were no major epidemics. Substantial, though unspectacular, progress was made against those firmly entrenched diseases that have tended to make Alabamians poor and unproductive as well as sickly. Our cancer-curbing program made marked headway. Our syphilis control campaign entered the homestretch. Our fight against tuberculosis continued to bring good results.

The State Legislature held its biennial session in 1947 and considered many bills with reference to health matters. Excluding financial bills, the most important measures passed that will affect the health of Alabama citizens were: (1) the Henderson Act to provide for the examination of all residents between the ages of 13 and 50 for tuberculosis, (2) the extension of the blood-testing program against syphilis, (3) the requirement of a premarital examination for both contracting parties to marriage, and (4) the establishment of a Water Improvement Advisory Commission to study stream pollution in the state.

In the financial field the Legislature gave increased appropriations for county health work, for syphilis control and for tuberculosis activities, both case finding and sanatorium upkeep. Costs have increased so rapidly, however, that the increased funds do not permit expansion but merely the holding together of existing programs.

It became possible to recruit a number of county sanitation officers but the supply of county health officers and county nurses as well as the medical and nursing staff of the Central Administration continued to be inadequate.

The hospital building program under the stimulus of the Hill-Burton Act was successfully launched and the widespread interest evidenced will undoubtedly lead to material progress in supplying the present hospital deficiency.

BUREAU OF ADMINISTRATION

HOSPITAL PLANNING

On March 17, 1947 the State Department of Health set up a Hospital Planning Division to administer the Hill-Burton Act, which provides for federal assistance in hospital construction.

In order to establish an accurate picture of the hospital situation in Alabama, an immediate survey of the hospitals, health centers, clinics, nursing homes and other allied institutions was begun. Five field assistants visited every existing hospital in the sixty-seven counties and traveled over 11,500 miles in so doing. This survey was made during the months of June and July.

From the results of the survey and the recommendations of the U. S. Public Health Service in regard to bed ratio per thousand, a state plan for hospital construction was drawn up. At a state-wide hearing in Montgomery on October 1 the plan was presented to the public and then forwarded to the U. S. Public Health Service for approval. Approval was promptly granted.

The Chattahoochee Valley Hospital Society of Langdale submitted the first application for hos-

pital construction. The application was for an 82-bed general hospital at an estimated cost of \$1,663,287 to provide general medical, surgical and obstetrical services, deep x-ray therapy, laboratory facilities and an outpatient clinic. This application was the first in the United States to be approved by the U. S. Public Health Service. Another first was scored when the application of the Commission of Jefferson County for \$936,644.77 for completion of the Public Health Center at Birmingham was approved. Approval has since been received for the construction of the Crippled Children's Clinic in Birmingham (\$1,701,105), the Druid City Hospital and Nurses' Home at Tuscaloosa (\$2,810,000) and the Dallas County Health Center at Selma (\$90,000).

At the end of the year applications for the following were on file with this division: DeKalb County Hospital (\$480,000), Carraway Methodist Hospital Nurses' Home (\$350,300), Blessed Martin de Porres Hospital (\$775,000), St. Vincent's Hospital Annex (\$1,000,000), Lee County Hospital (\$765,000), Clay County Hospital (\$170,000), and Decatur General Hospital (\$1,000,000).

All but two (Carraway Methodist and St. Vincent's) of these applications which are being held on file requested state aid for one-third of the construction costs. The State Legislature has authorized an expenditure of \$3,000,000 each year for the fiscal years 1948 and 1949 on the condition that there is a surplus in the general fund of the State Treasury, and the approval of the Governor is obtained. No funds have yet been made available by the state for the hospital program.

In September, the U. S. Public Health Service sent a trained health educator to the state to assist in setting up an educational program. She has concluded successful educational programs in Dale and Lee Counties and is working with community leaders in other counties along similar lines. Through her efforts and the cooperation of the Research Interpretation Council of the Alabama Polytechnic Institute four bulletins have been prepared for distribution. They are: *Bring Your Hospital Plans to Earth*, a study guide for community leaders; *So You Want a Hospital*, giving information about construction and operation costs; *On Our Way*, a summary of the state plan and state and federal aid for community leaders; and *One Way to Good Health*, a similar summary for the general public.

Requests for information regarding hospital planning and construction have been received from about half the counties in the state.

MACHINE TABULATION

The Division of Machine Tabulation continued to act as a service division, processing work for the various bureaus and divisions of the State Health Department.

The indexing and statistical reports connected with the blood testing program represented the largest single operation performed by this division. Other operations performed for the Bureau of Preventable Diseases were the preparation of the morbidity tables for the annual report, monthly venereal disease reports and special studies.

Indexes of birth, death and marriage certificates, along with statistical tables for the annual report were prepared for the Bureau of Vital Statistics.

A quarterly summary of the activities of county health departments was prepared for the Bureau of County Health Work.

Various special studies were prepared for different bureaus from time to time as the occasion arose.

PUBLIC HEALTH EDUCATION

The public health education program continued, with slight variation, the same general activities it has been attempting to carry on since its establishment in 1937.

As in previous years, this work was aided greatly by the cooperation and assistance of the newspapers and radio stations. In spite of the paper shortage and other handicaps, the former showed a disposition to be generous in their use of health information material sent them, while valuable broadcasting time was made available entirely without charge, first by Station WSFA (Montgomery) and later in the year by Station WCOV. There is every reason to believe that the willingness of these radio stations and the newspapers to make their facilities available to the greatest possible extent for the dissemination of health information caused the State Health Department's public health education program to reach many more people than could possibly have been reached by any other mediums, except at tremendous, and indeed prohibitive, cost.

Since there were no funds for subscription to the state's daily and weekly newspapers, no information is available as to the extent to which State Health Department releases were used throughout the state. However, as stated above, indications are that they received a friendly welcome and were widely published. The two Montgomery papers published 151 news items based upon them during the year.

As in previous years, the radio talks were broadcast weekly and subsequently mimeographed for distribution as public health education material. During the latter months of the year they were heard also through Station WCWG, in Selma, simultaneously with their broadcast through Station WCOV, in Montgomery.

The Film Library continued to serve county health departments, and through them, schools, social and cultural groups and others. The Film Library records show that booking orders were filled during the year for 509 films.

Other public health education activities included distribution of booklets, the writing of a weekly health article for the Associated Press, editing the State Health Department's annual reports, reviewing books for the *Journal of the Medical Association of the State of Alabama*, supplying information by correspondence, cooperation with the U. S. Public Health Service and other agencies and every other practicable measure which appeared likely to develop an intense and intelligent health-consciousness among the people of Alabama.

BUREAU OF COUNTY HEALTH WORK

The close of the year 1947 found all of the state's sixty seven counties embraced in a program of full-time health service even in the face of a continuing shortage of medical health officers and nurses. Improvement was noted in the availability of sanitation officers, and this was a source of gratification.

Of the sixty seven counties, 26 had separate health officers, 26 were covered by bicoounty projects, 13 were receiving administrative direction from physicians chosen by County Boards of Health, and Limestone and St. Clair had no medical officer oversight. The thirteen bicoounty combinations, the same number as a year ago, were Autauga-Chilton, Baldwin-Escambia, Bibb-Perry, Butler-Lowndes, Calhoun-Cleburne, Choctaw-Washington, Coffee-Geneva, Colbert-Lauderdale, Coosa-Elmore, Fayette-Pickens, Greene-Sumter, Jackson-Marshall and Lawrence-Morgan. Of the combinations prevailing in 1946, Chambers and Lee reverted to single county units, as did Limestone and Madison, although it is contemplated that Limestone will be joined with Morgan and Franklin with Lawrence, because of the separation of the last named from Morgan. New combinations not previously in effect were Calhoun with Cleburne and Colbert with Lauderdale. The thirteen counties receiving administrative guidance from practicing physicians acting as consultants to county health organizations were Barbour, Clarke, Clay, Conecuh, Henry, Lamar, Lee, Marengo, Marion, Monroe, Randolph, Talladega and Winston.

Record of activities for the year reflect a great power for good even when staffs are depleted. People numbering 201,838 were immunized against typhoid fever; 50,943 were vaccinated; and 46,396 children received diphtheria immunizations. Nursing visits to the tuberculous totaled 44,151; in maternity service 60,717; in infant hygiene 46,199; and preschool hygiene 28,269. Nearly 100,000 school children were inspected and 31,567 were given physical examinations. Thirteen thousand twenty seven (13,027) approved excreta disposal systems were installed, and 98,006 field visits made in the interest of improved environmental sanitation. Field visits to food-handling establishments numbered 81,611; and 13,668 visits were made to dairy farms.

A cooperative project for the elimination of hookworm in 20 counties was inaugurated in 1947 with the State Department of Health, the State Department of Education and the Research Interpretation Council of Alabama Polytechnic Institute participating. A bulletin, *Hubert Hookworm*, was written by the Council to aid schools in getting the cooperation of pupils and parents in this important step to improve the health of children and the community. An expansion of the program involves 12,000 veterans of World War II living on farms and now enrolled in vocational training in agriculture. Eventually about 50,000 veterans will take this training. Some 730 instructors supervise their projects, one of which is the building of a sanitary toilet where needed. Further, approximately 10,000 high school boys are studying vocational agriculture in which the

building of a sanitary toilet on the home farm is a home improvement project. Thus, here is another power for good that cannot help but produce results of great importance.

A last power for good was the institution on July 1, 1947 of a pension plan for employees of county health departments under the Employees' Retirement System of the state. Act 515 of the 1945 Legislature made this step possible, and it is hoped that its availability will be conducive to long tenure in county health work.

PUBLIC HEALTH NURSING

The close of the year 1947 found six nurses employed by the State Health Department, exclusive of those at the Mid-South Medical Center and on the syphilis survey program. Five of these nurses functioned on the consultant or supervising level and one rendered direct service in connection with the diagnostic x-ray program.

The Mid-South Medical Center reported 19 registered nurses, three of whom were on loan from the U. S. Public Health Service. Field service of the Venereal Disease Division reported three nurses. These assisted with the compulsory blood-testing survey.

Consultant nurses recruit nurses for county health departments, provide orientation for new personnel and assist with in-service training. In carrying on their program of supervision the consultant nurses participate in nursing activities of county health departments.

During 1947, 343 families were visited. Types of visits observed were as follows: antepartum, 47; postpartum, 35; infant, 58; preschool, 70; school, 24; venereal disease, 19; tuberculosis, 80; midwife, 12; other, 39.

Clinic and group meetings attended were as follows: maternity, 16; child health, 6; venereal disease, 11; midwife, 2; other, 25.

The following types of conferences were attended, the numerals indicating the number of conferences attended: health officer, 70; nurse, 158; other, 80; secretary, 26; director of public welfare, 19.

Advisory nurses made 59 visits to 38 counties.

Five county nurses were granted state scholarships for advanced study in public health nursing for the fall term at the following schools: Wayne University, Detroit, Michigan; Medical College of Virginia, Richmond; Peabody College, Nashville, Tennessee.

Eight Alabama nurses were granted state scholarships by the Health Department in order that they might attend a conference on the "Teaching of Health in the Basic Nursing Curriculum." This conference was conducted by Miss Mary Dunn of the U. S. Public Health Service and was held at the Medical College of Virginia in Richmond from November 12 through November 21. The group consisted of two public health nurse supervisors, five instructors in schools of nursing in Alabama and the educational consultant employed by the State Board of Nurse Examiners. The following schools were represented: Providence and City Hospitals in Mobile, St. Margaret's Hospital in Montgomery and Birmingham Baptist and Jefferson-Hillman Hospitals in Birmingham.

Since this conference, plans have been worked out to broaden the basic nursing curriculum at the schools which sent representatives to the conference. A follow-up conference is planned within the state in the spring, and it is hoped that the other schools will participate.

Four regional conferences on tuberculosis were held at twelve points in the state during January, February, March and April. The following topics were covered: medical aspects of tuberculosis; nursing care of tuberculosis; community aspects of tuberculosis; public health nursing activities in the tuberculosis control program. The conferences were planned primarily for public health nurses but the attendance included other health and allied workers. The response of the group to these conferences indicated a real interest and desire for help in meeting the problems in tuberculosis work.

Problems brought to light through the discussions that took place indicated the need of the clarification of policies already adopted or the setting up of policies in areas where there was confusion. This need has been met by the preparation of a manual which will soon be available. The need of a closer working relationship between the sanatoria and the county health department was likewise apparent. In many cases there is a lapse in the program of supervision to the patient because procedures for close inter-agency reporting have not been set up. Efforts to remedy this would contribute to more effective service by both agencies to patients.

Five two-day institutes on venereal diseases were held at the Mid-South Medical Center in Birmingham during April, May, June, July and August. A total of 102 public health nurses from 54 counties attended. The response of the nurses was excellent, and their interest was maintained, as shown by their increased participation in case finding in their respective counties.

Emphasis on teaching of Red Cross home nursing courses was increased during 1947. An area in northeast Alabama was selected with the idea of complete coverage. The full report of this service has not been received. Five nurses employed by county health departments participated in this teaching program.

Sixty-one counties reported a total of 167 nurses employed in December 1947. Thirty-seven of this number were Negro nurses.

Fifty-eight industries in Alabama employed a total of 130 nurses in December.

MERIT SYSTEM

Examinations were administered during 1947 in the following series: Clerk I and II, Typist I and II, Sanitation Officer II and III, County Health Officer I and II, Meat and/or Milk Inspector, and Public Health Engineer. For the total examinations given, there were 311 applications. Of that number, 300 were acceptable, 202 appeared for the written examinations, 156 made passing grades, 45 failed the examination, and one withdrew. From the 156 names which were placed on eligible lists, 76 appointments were made.

Revised salary ranges were adopted for the following classes: Clerk I and II, Typist I and II,

Sanitation Assistant, Scientific Aide, Sanitation Officer II and III, Public Health Engineer, Meat and/or Milk Inspector, and Health Attendant.

In April the *Rules and Regulations of the Merit System*, with all revisions adopted since the installation of the Merit System in 1944, were published.

All classes in the nursing series were revised and new specifications were submitted to the U. S. Public Health Service and the U. S. Children's Bureau for approval. In addition, the following new classes and specifications were recommended: Typist III, Record Clerk, and Utility Worker.

BUREAU OF VITAL STATISTICS

For the second consecutive year the Alabama birth rate reached a new high in 1947. The number of deaths rose slightly, while the number of marriages and divorces declined. During the year the Registrar of Vital Statistics received a total of 177,133 original records, including 8,152 delayed records of birth established through documentary proof and legal processes. Also included were 517 adoptions and 290 legitimations which were prepared and filed in compliance with statutory provisions. As in previous years, a monthly report of accidents, with accidental deaths typed with forty-one categories, was furnished the National Safety Council for use in promoting its accident prevention program. Many detailed statistical compilations were made on request for research agencies, other bureaus of the Health Department, students members of the medical profession and disease control societies. Cooperative work was continued with the Federal Bureau of the Census and the U. S. Public Health Service in an effort to improve registration throughout the state and to furnish statistics comparable with those of other states. Some field work was done to improve local registration, and installation of a simplified county system of reporting was begun.

The high, war-expanded public demand for birth, death and marriage certificates continued on into the postwar period and maintained itself with but little downward adjustment. Requests for certified copies and other vital statistics data and services were continuous throughout the year, with a peak of 8,556 searches required in the month of September. An average of 571 pieces of mail arrived each working day, totaling 141,643 pieces for the year. During 1947 a total of \$19,281 was received in fees. This sum represented 38,562 certified copies of vital records, not including 9,294 copies issued without charge for use by the Veterans Administration. In addition to the certified copies, 24,978 requests were filled for non-certified information for social security, welfare and miscellaneous purposes. In 1946 a total of \$22,322 was received in fees, representing 44,644 certified copies. Additional copies totaling 13,808 were issued for the Veterans Administration. Records of 1,181 veteran deaths were filed in 1947. Of these decedents, 513 were veterans of World War II, 602 of World War I, 5 of both World Wars and 61 of other wars.

Correcting records is a necessity and consumes a great amount of clerical time. During 1947 a

total of 7,668 correction affidavits was processed. In other words, approximately one-sixth of all records from which certified copies were made had to be corrected. As a means of correcting obvious errors in order to complete records received currently the Bureau of Vital Statistics mailed out, in 1947, 4,579 queries asking the recipient to complete and correct death certificates. It received 3,840 replies to these. These queries enabled Bureau nosologists to make a more accurate classification of cause of death in 1,814 cases. As in earlier years, in order to obtain more accurate information on birth certificates, a photostat copy of each birth certificate filed was mailed to the parents, along with a correction blank to be returned with indicated corrections which needed to be made.

DEATHS

Alabama's general death rate in 1947 was the lowest in the past thirty-six years, with two exceptions. The rate in 1947 was 8.5 per 1,000 population as compared with 8.2 in 1946 and 8.5 in 1945. In 1947 there was a total of 25,833 deaths, while in 1946 there were 24,491. The annual average for the five-year period, 1942-1946, inclusive, was 8.9. A provisional report for 1947 showing mortality statistics in detail will appear in an early issue of the *Journal of the Medical Association of the State of Alabama*.

The gains made during the war in lowering infant mortality were maintained through 1947, and the neonatal death rate was reduced below the 1946 figure. There were 2,271 deaths of infants under one month of age in 1947, with a rate of 26.5 per 1,000 live births, while in 1946 there were 2,106 deaths, with a rate of 26.7. It will be observed that while the actual number of neonatal deaths increased because of the great upsurge in the number of births, the rate declined by two tenths of one per cent. The number of deaths for infants under one year of age for 1946 and 1947, respectively, was 2,975 and 3,235, with a rate of 37.7 for both years, a figure well below the five-year average rate of 44.2. The number of maternal deaths (223 in 1947) was also below the five-year average number of 262, and the 1947 maternal death rate (25.2 per 10,000 total births) was much below the five-year (1942-1946) average rate of 33.9. However, the 1947 rate was slightly higher than the rate of 24.7 recorded in 1946. It is gratifying to observe that the continued general downward trend in infant and maternal mortality rates denotes great progress in the field of infant care at a time when medical facilities in many communities are overtaxed by a great increase in number of births and a shortage of physicians and nurses. The per cent of hospital deliveries increased from 29.9 for 1942 to 49.3 in 1946. The benefits of adequate prenatal and postnatal care are without doubt reflected in the declining infant and maternal deaths rates. Another index of improved health services is the stillbirth rate, which was 28.3 per 1,000 total births, with 2,501 stillbirths recorded. The five-year (1942-1946) average showed an annual stillbirth rate of 29.6 per 1,000 total births. Although the crude death and stillbirth rates were slightly above the 1946 rates, this may possibly

have been due to an improvement in the completeness of registration. Reporting of these events is not complete, and there is no way of ascertaining whether or not the reporting was better or worse in 1947 than it was in previous years.

Of the ten principal causes of death, eight showed an increase both in number and in rate over 1946, although rates for only four causes (heart disease, intracranial lesions, cancer and homicide) were above the five-year (1942-1946) average. The number of deaths from heart disease showed an increase of 610 over 1946 and an

increase of 817 over the five-year average. The 1947 accidental death rate was lower than that for 1946; the syphilis death rate of 10.3 per 100,000 population was the lowest in over twenty years. In 1947 nephritis resumed the position it held in 1945 as fourth major cause of death, pushing accidental deaths into fifth place. Influenza moved out of the ten major causes group, from eighth to eleventh place. The table below shows the number and rate for each of the ten leading causes of death during 1947, with comparable statistics for 1946 and a five-year average (1942-1946, inclusive).

Ten Major Causes of Death

Cause	1947		1946		Average 1942-1946	
	Number	Rate	Number	Rate	Number	Rate
Diseases of the heart (90-95)	5,920	195.1	5,310	176.9	5,103	176.3
Intracranial lesions (83)	2,618	86.3	2,359	78.6	2,356	81.4
Cancer, all forms (45-55)	2,327	76.7	2,245	74.8	2,051	70.9
Nephritis, all forms (130-132)	1,934	63.7	1,911	63.6	2,084	72.0
Accidents, all types (169-195)	1,891	62.3	1,922	64.0	1,945	67.2
Pneumonia, all forms (107-109)	1,165	38.4	1,114	37.1	1,375	47.5
Tuberculosis, all forms (13-22)	1,116	36.8	1,098	36.6	1,228	42.4
Homicide (165-168)	457	15.1	424	14.1	358	12.4
Diabetes mellitus (61)	359	11.8	345	11.5	353	12.2
Syphilis (30)	314	10.3	332	11.1	380	13.1

The 1947 provisional report shows a decrease during the year from the previous one in the number of deaths from principal contagious diseases, with the exception of a large increase in whooping cough, one additional death from scarlet fever and one from diphtheria. Whooping cough was the only communicable disease listed with a death rate higher than the five-year average. Although the disease is of a cyclical nature, the 117 deaths from whooping cough in 1947 offer a tragic commentary on the failure to immunize all babies against the disease. Another cause for concern is the number of deaths from diphtheria. Despite a decline of nearly one-half from the 1945 figure in the number of deaths from this communicable disease, the fact remains that the 30 diphtheria deaths that did occur in 1947 could have been prevented by immunization. Diarrhea and enteritis death rates have declined to only a little more than a third of the five-year average. Declining death rates from this cause and also from malaria, typhus fever and possibly poliomyelitis reflect the control work and DDT spraying and dusting that have been carried on.

The table below shows the numbers and rates for this group of causes for 1947, 1946 and the 1942-1946 average.

BIRTHS

The spectacular rise in birth registration in 1946 continued unabated and in 1947 produced the greatest number of births ever recorded in Alabama. A total of 85,832 live births was registered, with a rate of 28.3 per 1,000 population. In 1946, 78,966 births were recorded with a rate of 26.3 per 1,000 population. The five-year average (1942-1946, inclusive) shows 74,965 births a year with a rate of 25.9. This sharply rising trend in births has followed the marriage trend, with a lag of about twelve months. Since 1947 showed a decline in the number of marriages it appears probable that the rising birth rate will end sometime in 1948.

MARRIAGES AND DIVORCES

The total of 46,340 marriages recorded in Alabama in 1947 was nearly ten thousand less than the 56,333 recorded in 1946. As in the case of the

Deaths from Communicable Diseases

Cause	1947		1946		Average 1942-1946	
	Number	Rate	Number	Rate	Number	Rate
Influenza	313	10.3	410	13.7	503	17.4
Whooping cough	117	3.9	38	1.3	89	3.1
Diarrhea and enteritis (under 2 yrs.)	100	3.3	122	4.1	240	8.3
Diphtheria	30	1.0	29	1.0	46	1.6
Meningitis	27	0.9	33	1.1	52	1.8
Measles	25	0.8	47	1.6	37	1.3
Malaria	18	0.6	31	1.0	52	1.8
Typhus fever	16	0.5	22	0.7	33	1.1
Poliomyelitis	8	0.3	21	0.7	16	0.6
Typhoid and paratyphoid	6	0.2	10	0.3	14	0.5
Scarlet fever	2	0.1	1	---	2	0.1

rising birth rate, interpretations of marriage statistics must take into account that the war years were characterized by the absence on overseas assignments of a large number of men of marriageable age, with a consequent postponement of marriage and the creation of a backlog of delayed marriages. This backlog appears to have been absorbed by the end of 1946. This resulted in a reduction of the marriage rate during 1947. Divorce rates also declined. There were 10,408 divorces granted in 1947, as compared with 14,025 in 1946. These statistics show that one marriage was dissolved by divorce for every 4.5 marriages performed. The rate is lower than that for either 1946 or 1945. In 1945 one divorce was granted for every 3.6 marriages.

BUREAU OF MATERNAL AND CHILD HEALTH

Last year it was shown that maternal and child health services in Alabama had had a downward trend since 1943, but it was hoped that 1947 would bring at least a partial recovery. Improvement was noted in child-health activities, only slightly in maternal services, and not at all in the number of dental clinics. The same number of counties (35) had maternity clinics in 1947, with two additional centers, while three additional counties (20) had child-health conferences. Dental clinics were held in 23 counties, four less than in 1946. Local organizations in two counties provided dental clinics independent of the State Department of Health. The loss of the dental clinics was due to non-availability of dentists.

The personnel of the Bureau remained the same. All efforts to fill the vacancies caused by resignation of the obstetricians, pediatricians and dentists have signally failed. Even when qualified men made inquiries about the positions, they seemed to lose interest when told the state salary scale.

Numerous efforts have been made to stimulate interest in and promote new clinics. The administration of and the work in connection with the Emergency Maternity and Infant Care Program have required much less time than formerly, as this program was being liquidated. Authorizations in the maternity phase will end in the spring of 1948. Care of infants will continue into 1949, however.

Additional funds were granted by the U. S. Children's Bureau for graduate training of professional personnel for maternal and child-health services or an expansion of these services. Two special projects, the Slossfield Health Center and the Macon County Medical Care Program, were financed in that way. Special consideration was given to a program to reduce the mortality of premature infants. To this end, incubators and equipment were purchased for the Jefferson-Hillman Hospital. Ten portable baby incubators will be placed in as many counties where they will be available for the use of physicians in those areas.

MATERNAL HYGIENE

There were 3,479 clinic sessions for antepartum and postpartum patients. New antepartum cases numbered 9,976, and 63% of these were attended before the sixth month of pregnancy. Tests for

syphilis were made for 7,444 antepartum patients, and 4,890 treatments were given. At these clinics advice on baby spacing was given to 944 women. The total number of visits was 40,227. These figures represent a slight increase over 1946, except in the spacing services.

CHILD HYGIENE

In 680 child-health conferences 8,494 children were admitted to physicians' services. This represented an increase of approximately 3,000 over the number in 1946. The actual number of clinics was increased very little, but the attendance was much better. Of this number, 7,681 had physical examinations and check-ups by the clinicians.

DENTAL HYGIENE

The 4,830 children who attended the dental clinics were 900 less than in 1946. Fewer treatments were given, as there were 27,808 in 1947 and 31,104 in 1946. Treatments were prophylactic and corrective, cleanings, fillings and extractions. School children made a total of 12,808 visits to dental clinics. A program for the topical application of sodium fluoride solution has been considered but is not thought practical without a dentist and dental hygienist on the state staff.

NUTRITION

The nutritionists extended their services to county health departments, teachers, school lunch managers, home demonstration agents, nursery schools, industrial organizations and child-caring institutions. There was participation in three dietary surveys and studies. Fifty-nine counties were visited and direct service given in twenty-six homes, reaching 617 individuals. Nutrition workshops were held, and meetings on nutrition councils and dietetic associations were attended. Educational material was prepared, and 2,500 pieces of literature were distributed to counties and agencies.

REPORTS FROM COUNTY HEALTH DEPARTMENTS

The county public health nurses made 39,505 visits to 15,259 maternity cases. The average per-case visit was 2.8 for the antepartum and 2.3 for the postpartum. These visits totaled 2,620 less than in 1946. Visits to infants showed an increase of 10,642 over 1946, but in 1946 there were 17,007 less visits than in 1945. The total of 45,847 visits to 13,337 infants in 1947 represents a recovery of lost services. The average was 4.4 visits per infant. Preschool children received 27,684 visits and school children 5,347. For services to crippled children there were 5,492 visits, or 1,203 more than in 1946. It was not until late in the year that pertussis immunization was offered by the county health departments, and 3,504 children were immunized.

SLOSSFIELD MATERNITY HOSPITAL SERVICE

Nineteen forty-seven was the seventh year of this service to the Negro population in a Birmingham area. It is financed largely by an allotment from the U. S. Children's Bureau. Started as a demonstration project to show the benefits of good maternity care, it has been continued

from year to year with the aid of Federal funds. The bed occupancy can be stated as its capacity. Patients are private, industrial and EMIC and are attended by Negro physicians. A qualified white obstetrician and a qualified white pediatrician are available at all times. The staff of Negro nurses is supervised by the Director of the Nursing Division of the Jefferson County Board of Health.

Four hundred and sixty-eight mothers were delivered of 464 live and ten stillborn babies during the year. There were no maternal deaths. The stillbirths rate was 21.5 per 1,000 total births and the neonatal death rate was 15.0 per 1,000 live births. There were no home deliveries, and no major operations were recorded.

MACON COUNTY MEDICAL CARE PROGRAM

Funds were received from the U. S. Children's Bureau to expand this service to make better use of the enlarged and well equipped maternity unit of the John A. Andrew Memorial Hospital at Tuskegee. This larger program began on January 1, 1947, by a plan jointly operated by the hospital and the Alabama State Department of Health. A qualified obstetrician became resident chief of the Obstetrical Division of the Hospital. The medical and nursing staffs were enlarged and medical services made available. The area served was Macon County and the five bordering counties. An agreement was made to purchase medical and hospital care at an all-inclusive per diem rate. The sum of \$50,000.00 was provided for this plan.

The majority of the maternity cases were abnormal and presented medical emergencies, obstetrical complications or history of previous difficult labor. A brief account of results will indicate this. Five hundred and twenty-six babies were born to 516 mothers. Of these deliveries 46.9% were operative, with 17 cesarean sections, 197 episiotomies and 171 forceps cases. There were 56 premature infants, or 11% of total live births, and 23 of these operative deliveries. Twenty-eight cases, or 5.4%, were admitted on account of hemorrhage, 14 antepartum and 14 postpartum. Eclampsia caused hospitalization of 184 cases, 180 of which were preeclampsia, with 59 classed as severe. Fifty-eight infants, including 29 prematures, were hospitalized.

THE EMERGENCY MATERNITY AND INFANT CARE PROGRAM

Only 23 maternity and 12 infant cases were authorized for care in December 1947. Maternity cases cannot be approved if the expected date of confinement, as calculated by the physician, is later than April 5, 1948. As already stated, care of eligible sick infants will continue into the spring of 1949. During the four year period 1944-1947 there were 18,049 maternity cases completed and paid for. Of these 76.6% received hospital care with an average stay of 7.25 days and at an average cost of \$78.20 for medical services and hospital care. Consultation with specialists was provided for 1.44%.

During this four-year period, 1,513 sick infants were cared for with 53.26% receiving hospitaliza-

tion. The average stay in the hospital was 13.03 days per infant, and the average cost was \$66.61 for medical and hospital care. Five per cent of the infants received consultation from specialists. A detailed tabulation and study of the total EMIC cases is now being made and should be ready for the next report.

Maternity cases authorized under the EMIC program during all of 1947 numbered 808, and infant EMIC cases authorized during that year totaled 237, or a grand total of 1045.

BUREAU OF LABORATORIES

The Bureau of Laboratories continued to experience serious difficulties with the problem of inadequate personnel during the year. All of the Branch Laboratories were kept in operation despite this handicap, although they were not able to take care of all the demands made upon them. A continued rapid turnover of personnel, plus the general limited experience of workers, added to these difficulties. The average length of experience of technical personnel continued to become shorter.

DIAGNOSTIC SERVICES

A total of 497,798 specimens were examined during the year. That was 53,559 less than were examined during the previous year. This drop in the total specimens examined was almost entirely in bloods tested for syphilis. The number of these specimens dropped from 352,432 for 1946 to 292,121 for 1947, or 60,311 less during 1947.

A decrease in serologic specimens for syphilis was doubtless due to the accelerated mass blood testing in the statewide survey. Bloods tested in the survey are not included in the above figures. The large number of diagnoses for syphilis made in the survey would account for the drop in the number of routine diagnostic bloods for syphilis.

A general upward trend in the totals by specimens is shown in most instances. Increases over the previous year were noted in the following specimens: feces for intestinal parasites, cultures for enteric pathogens, bloods for agglutination, cultures for diphtheria, specimens for tuberculosis, water samples and milk samples.

Requests for hookworm surveys on a county-wide basis have been received from a large number of counties. In most instances, it has been necessary to refuse these specimens, as adequate personnel was not available. This is a regrettable situation, especially in view of the fact that extensive follow-up work in sanitation had been planned in many of these counties.

BIOLOGIC SERVICES

The manufacture and distribution of biologic products continued on a scale comparable with the previous year. The demand for typhoid vaccine has not reached the prewar level. This probably results from less activity in immunization clinics due to personnel shortages.

Table I shows the amounts of biologic products manufactured and distributed during 1947.

Table I

Biologic Products Manufactured and
Distributed During 1947

Rabies treatments (complete)	2,199
Diphtheria toxoid (alum)	94,000 cc.
Typhoid vaccine	390,970 cc.
Schick toxin	594 cc.
Silver nitrate ampoules	64,212
Sterile saline	11,370
Sterile distilled water	2,414,300 cc.

BLOOD PLASMA DISTRIBUTED

The distribution of American Red Cross surplus blood plasma was continued through the year, and the available supply was exhausted. A total of 36,542 units was placed at the disposal of hospitals and physicians throughout the state. This plasma was doubtless responsible for saving many lives, and a demand for blood and blood products has been created.

PERTUSSIS VACCINE PROVIDED

Funds were made available by the U. S. Children's Bureau for the purchase and distribution of pertussis vaccine. The distribution of this product was handled by the laboratories. Although this vaccine was not made available until about midyear, 7,267 doses were distributed to the health officers of the state.

IMMUNE GLOBULIN SUPPLIED

Immune globulin made available by the American Red Cross for free distribution was handled by the laboratories. During the year 5,277 doses of this product were distributed. The use of this product will create demand for another blood product that cannot be furnished when the supply is exhausted unless a source is found.

BUREAU OF PREVENTABLE DISEASE

EPIDEMIOLOGY

Nineteen forty-seven was a non-epidemic year. Some communicable diseases continued their downward trend, while others remained stationary or returned to their normal higher incidence. Typhoid fever cases decreased from 64 in 1946 to 42 in 1947; malaria remained practically unchanged, with 1,541 cases in 1946 and 1,550 in 1947; and diphtheria declined from 370 cases in 1946 to 358 in 1947. But there were still too many cases of diphtheria, and so a concerted drive was put in operation to reduce its morbidity further.

Poliomyelitis remained quiescent, with only 50 cases reported, and in no instances was there any marked concentration. Measles and influenza were contained within their normal incidence range, with 3,010 cases of the former and 1,050 cases of the latter reported.

VENEREAL DISEASE CONTROL

Mass blood testing continued at the rapid pace of the previous year. The survey was carried to 28 counties, and 459,496 persons were blood tested, with 30,023 of these showing positive or doubtful reactions. This left nine counties still to be sur-

veyed. Follow-up of the positives, doubtfuls and those classified as unsatisfactory was carried on in 34 counties. This covered 40,030 persons. With so many phases of mass blood testing—preparation, education, blood testing and follow-up—in operation, some part of the work was being carried on in at least ten counties at any one time.

Of the proven syphilis uncovered by mass blood testing, about fifty per cent is referred to private practice and fifty per cent to the Rapid Treatment Center. As a result, the Rapid Treatment Center has become an integral part of the mass blood testing program. With a bed capacity of 1,000, this center treated 18,394 infected people. Penicillin was the only drug used, and a remarkable number of "cures" occurred.

Since penicillin treatment has outmoded the older, slower methods of treatment, pressure was exerted to close up the nine remaining local clinics. However, only one was closed during the year.

One injection of one cc. of penicillin, oil and beeswax cures gonorrhea; and 11,039 ccs. of this drug were distributed to county health departments. Even with this amount of the drug supplied and the rapidity of cures, the gonorrhea problem remains about the same, with 9,046 cases reported during the year. The value of the control programs is somewhat doubtful since many of the cases acquire repeated infections.

From clinics, practising physicians and the mass blood testing program, 23,826 cases of syphilis were reported.

CANCER CONTROL

Entering its fifth year on October 1, the State Health Department's concentrated drive against cancer continued its steadily increasing frontal assault against this disease with its five clinics examining and treating 1,302 cases during 1947. There were 144 additional patients who were referred to the clinics but who failed to report for various reasons. But of those who did report, 253, or 19.4 per cent, were found to be precancerous or non-malignant. This showed improvement over 1946, when only 13 per cent were found to be non-malignant.

The program's goal is an increasing yearly growth of the clinics, with the majority of the referrals in the group being found to be in the early carcinomatous and precancerous class. In 1947 six per cent of the patients referred are now dead and many were late hopeless cases.

The reporting of cancer was only fair, since there were 3,183 cases reported, with 2,327 deaths. It is estimated that for every death there are at least four new cases. At that rate Alabama must have nearly 10,000 new cases of cancer instead of the 3,183 reported.

INDUSTRIAL HYGIENE

Handicapped by constantly changing personnel, the industrial hygiene program reached its lowest ebb when for three months, June to September, the staff conducting it consisted of only a clerk-stenographer. Rejuvenation occurred in September when two trained engineers augmented the weak staff.

A program of visiting all plants was begun in an effort, through good will, to stimulate the lagging interest in industry. As a result, 68 plants were visited and a beginning industrial hygiene program was on the way.

TUBERCULOSIS CONTROL

Tuberculosis control activities were expanded, and the results of this expansion were reflected in an increase in the number of individuals x-rayed and also in the number of new cases found. These increases were made in spite of shortages of x-ray film and professional personnel.

There was a total of 25,551 x-ray examinations of the chest made in the diagnostic clinics throughout the state. Of this number, 12,299 were x-rayed for the first time. The x-ray findings in this latter group showed 305 to be suspicious, 199 to have minimal disease, 217 to have moderately advanced disease and 160 to be far advanced. Fifty-seven were positive but no stage was shown; 18 had primary infection; one had miliary spread and 574 were deferred. The remainder of the total number of examinations made were made on known cases and contacts that had been previously x-rayed.

Consultation service to private physicians was continued. Out of a total of 283 private films read, 33 were found to be suspicious. Of the others, 4 showed minimal disease, 22 moderately advanced disease, 18 far advanced disease, 12 primary infection, and one pleurisy with effusion. Three were positive but the stage was not indicated.

Screening of certain population groups by means of a 70 millimeter photofluorographic unit has continued, with a total of 47,725 persons x-rayed. Out of this group, 304 positive cases were found. Of these, 146 were minimal, 141 moderately advanced and 17 far advanced. It will be seen by comparing these figures with those given in the preceding paragraphs that case findings by means of mass screening is more effective in finding the disease in its earlier stages than is the x-raying of individuals in the diagnostic clinics. Equipment for setting up six additional pneumothorax clinics was issued to six county health departments in the south and central parts of the state. A total of 23,856 pneumothoraces were given in the county clinics and outpatient departments of the sanatoria.

An efficient central tuberculosis case register was completed during the year, and local case registers were set up in 28 counties. The work of setting up the local registers will continue until every county has one.

In August the Alabama Legislature passed the Henderson Act (No. 247), which requires that all individuals in the state between the ages of 13 and 50 be examined for tuberculosis. It is expected that this mass survey program will get underway early in 1948.

Two new bus x-ray units having their own source of power were delivered in October. These will be used in mass survey work.

BUREAU OF SANITATION

With the expansion of the Bureau's programs, more and more of the services formerly rendered by its personnel have, through necessity, been delegated to county personnel. The success of the program depends upon the degree to which the county personnel is qualified to perform these duties and to the degree to which the Bureau can give technical direction to the counties. At the end of the year only three counties were staffed with graduate engineers. In the absence of an established training school, the Bureau, with its limited facilities and personnel, conducted three six-week training schools in an effort to give 25 sanitation officers orientation and basic work in public health. It is hoped that in the coming year graduate engineers can be interested in assignments in the field of environmental sanitation.

Through the efforts of county sanitation personnel, 11,823 new approved sanitation units consisting of 3,149 pit privies, 4,020 septic tanks and 4,654 sewer connections were installed during the year. These serve a population of 59,198. In addition, 747 units of sanitation were restored to their former effectiveness in the protection of the public health for 5,128 persons. Thus it is seen that 64,326 persons were served through the installation of 12,570 privies, septic tanks and sewer connections.

The work continued to be handicapped by both the price and shortage of materials and labor. However, the lack of adequate technical direction, caused by the shortage of district personnel, is considered the greatest handicap facing the work at the present time. In spite of these handicaps, it is noted that considerably more work was completed than during the previous year.

The availability of qualified men enabled the Bureau of Sanitation to conduct three six-weeks orientation training schools during the year, with a total enrollment of 25 sanitation officer trainees. All of this number successfully completed the course and received assignments to duties as county sanitation officers. Four sanitation officers were transferred from one county to another and nine left the service by resignation.

TYPHUS CONTROL

The number of reported cases of endemic typhus fever (Brill's disease) in Alabama for 1947 was lower than any year since 1931. A total of 187 cases, including eleven deaths, was recorded.

Typhus control activities included advisory and supervisory service in rat-proofing, rat-stoppage, rat-infestation surveys, extermination campaigns, educational campaigns and the collection of entomologic data. These activities were conducted by federal, state, county and city personnel, with the necessary material furnished by the agencies concerned. In general, the program was a continuation of the 1945-1946 operation, with expansion to include additional areas as indicated.

Following an appraisal by the U. S. Public Health Service of the typhus incidence in the nine southeastern states for the period 1940 to 1944, inclusive, federal funds were allocated for the specific purpose of attempting control through

the use of DDT powder to destroy the rat flea, the known agent responsible for the transmission of endemic typhus fever from rat to man. Supervision, transportation, DDT powder and equipment for its distribution were provided by this fund. Local participation, including labor, poisoning material and hydrocyanic acid gas, was furnished by the governing agency wherein the program was conducted. Only two of the eighteen approved counties did not participate in a program. Tabulated reports show the following: 90,788 premises inspected; 70,144 premises treated; 245,731 pounds of DDT powder applied; 55,293 pounds of poison bait and 3,078 gallons of arsenic water distributed; and 8,344 pounds of hydrocyanic acid gas used for gassing rat harborage. A total of 30,821 manhours of supervision and labor were furnished by the U. S. Public Health Service, supplemented by 57,976 manhours of supervision and labor furnished by the state and participating counties.

About 86 rat extermination campaigns were carried out in some 65 municipalities, giving from one to four coverages each. Many of these programs are conducted twice each year and are becoming an accepted procedure as a rodent and typhus control measure.

A conference of the Alabama Pest Control Association was attended by the State Health Officer and others. Activities pertaining to this phase of public health were explained and the effective control measures practiced by the exterminators were encouraged.

Entomologic studies were continued in an effort to obtain definite, conclusive information that would be of value in formulating future control measures.

PUBLIC WATER SUPPLIES

Although a shortage of certain materials and equipment existed and construction costs continued high, the number and value of water-works improvements completed or under construction during 1947 were most gratifying. Forty-four communities completed essential projects at an estimated cost of \$2,243,000, and twenty-one projects with an estimated cost of \$1,414,000 were under construction at the end of the year.

During the year final plans and specifications were checked and permits issued for ten complete new water-works systems at an estimated cost of \$508,000 and forty-seven projects to improve existing systems, representing a monetary value of \$4,948,000.

Inspections were made of all public water supplies at least once during the year for the purpose of checking the water-works equipment and operating procedures, giving instructions to operating personnel and advising responsible water-works officials concerning water-works problems. In most instances reports, including recommendations, were submitted to the proper officials covering each individual inspection. Two hundred and eighty-eight inspections were made during the year, exclusive of the inspections made by the sanitary engineers in Jefferson County.

The state's 310 public water supplies submitted a total of 15,853 samples to the laboratories for bacteriologic analysis. The State Laboratory and its branches made the analysis of the water samples submitted, and the reports of the analyses were interpreted by the engineers in the Bureau of Sanitation.

The Department's engineers consulted with practicing engineers and representatives of federal agencies on water-works problems and improvements. In addition to the major activities, 22 supplies were reported to the U. S. Public Health Service for its consideration in certifying them for use by interstate carriers. Thirty-one reports covering inspections of watering point sanitation were also submitted to the U. S. Public Health Service for appropriate action.

SEWERAGE

The plans and specifications for eighteen sewerage works projects were checked and permits issued for proposed improvements during the year. The estimated cost of these projects was over four and one-half million dollars.

Fifteen sewerage works projects were completed during the year at an estimated cost of \$1,598,000. Three of these were for complete treatment, primary and secondary.

Seven projects for sewerage works were under construction at the end of the year.

The report of the stream pollution study on the Warrior River, prepared by Gilbert H. Dunstan, Associate Professor of Sanitary Engineering, University of Alabama, has been printed and is now available. During the year the Legislature passed a bill to create and establish a Water Improvement Advisory Commission and appropriated the sum of fifty thousand dollars annually for two years for the purpose of carrying out a study of the stream pollution problems in the state. The Commission, consisting of fifteen members, was formed by the end of the year.

MALARIA

Malaria control operations on major impoundments were, with only three exceptions, successful in controlling malaria mosquito production at a reasonably safe level. The normal operating levels of two of the impoundments where control was not successful were maintained at higher elevations than was the practice prior to 1946. This resulted in flooding uncleared areas where it was impossible to obtain satisfactory larvicidal control of mosquito production. Numerous visits were made to these lakes during the mosquito-breeding season and recommendations were made to the owning agency relative to increasing the efficiency of the control program. As a temporary measure to prevent a possible malaria epidemic, the owning agency treated all occupied residences located within one mile of each reservoir with a 5 per cent DDT residual house spray. It is expected that these lakes will be cleared in accordance with the Regulations Governing the Impounding of Water before the beginning of the 1948 mosquito-breeding season or that the lakes will be operated at or below the elevations that were maintained prior to 1946. The adult

mosquito densities on the third impoundment were about the same as in 1946; however, satisfactory control was not obtained in certain areas. Annual encroachment of aquatic vegetation has created conditions which make satisfactory mosquito control exceedingly difficult, if not impossible, by the present larviciding procedures. Recommendations were made to the owning agency to employ a DDT larvicide during 1948 instead of the kerosene-black oil mixture which has been used since control operations were begun. It was further recommended that the use of 2-4 D in the eradication of certain aquatic plants be thoroughly explored during the 1948 mosquito breeding season. The shoreline reconditioning work on one lake, which was completed prior to the mosquito breeding season, and an efficient larviciding program there resulted in the lowest adult mosquito densities on that lake since 1936. A combination of factors, including DDT larvicide, efficient water level management and shoreline maintenance, resulted in reducing the average mosquito densities on three lakes of the TVA about 50 per cent.

The construction of small ponds for fish, live stock and recreation continued to increase during the year. Visits were made to 24 counties to assist the sanitation officers in this phase of their environmental sanitation program. County personnel made 780 inspections, the greatest number that had been made during any year, whereas 277 inspections were made by state personnel. The amount of work done during the year incident to placing the ponds under permit was about twenty-five per cent of the total amount done since the Regulations were adopted twenty years ago.

The State Department of Health and the U. S. Public Health Service jointly operated two malaria control programs. Malaria control operations in military areas continued to decrease during the year. Entomologic inspections were conducted at three U. S. air fields; however, larvicidal control work was not required.

The DDT residual house spraying program was further expanded during the year through financial participation in the program by certain county governing bodies. The sole purpose of the program is the reduction of malaria transmission by killing the malaria-transmitting mosquitoes when they come in contact with DDT-treated surfaces inside occupied houses. The reduction in houseflies and other household pests made this program exceedingly popular with the laity. All counties pre-approved by the U. S. Public Health Service for DDT spraying were given an opportunity to participate in the program. During the year 71,337 houses were treated, of which number 45,750 were treated through expenditure of federal funds and 25,587 through expenditure of local funds. The total number of house treatments made was 126,900. Of the houses treated with federal funds, approximately 90 per cent received two treatments, whereas, approximately only 55 per cent of the houses received two treatments under the county program.

Municipally financed DDT residual house spraying programs were expanded during the

year. Thirty one municipalities carried out programs and approximately 16,950 houses were treated. The municipalities carrying on programs varied in size from 70 to 5,207 houses. In all instances these programs were enthusiastically received by the people. Present indications are that this type of program will be expanded during the coming year.

INSPECTION

At the end of the year 15 counties had one or more men assigned full time to inspection work, 30 had full-time sanitation officers or veterinarians devoting part-time to food inspection, 10 had full-time sanitation officers serving two counties each and 12 had no inspection programs.

Food sanitation ratings were made in 26 counties. The numerical average of these was 89.8, which is 2 points higher than for 1946. However, this apparent improvement in the average condition of food establishments may be due to the small number of counties represented in the ratings.

Four food-home epidemics involving more than 150 persons were reported during the year. However, verbal and other unofficial reports of outbreaks for which no epidemiologic data were submitted would indicate this figure to be incomplete.

Advisory assistance on milk and milk products sanitation was rendered in 49 counties. Only five milk sanitation ratings, covering six cities and one county, were made. The weighted average of the retail raw milk ratings was 73.2, as compared with 76.4 in 1946, while that for pasteurized milk was 82.3, as compared with 80.0 in 1946. In reality the number of ratings made was not sufficient to determine the progress attained in this respect during the year. There were about 1200 dairy farms and 100 pasteurization plants under supervision of the various county health departments. These sold about 92,000 gallons of milk per day, thereby showing a slight increase over 1946 and a 225% increase when compared with 1941. About 90% of this milk was pasteurized. Thirty-two pasteurization plants were constructed and put into operation during the year, six of these in cities where pasteurized milk had not previously been available.

Because of the lack of personnel and other conditions beyond our control during the year, very little work was done toward the preparation of tourist and trailer camp regulations, as well as revision of the food regulations.

The routine supervision of oyster shucking and crab-meat picking plants was continued in a most efficient manner. The state's participation in the meat plant sanitation program, started in 1945, has been practically discontinued because of inability to obtain veterinarians for that purpose.

DRAFTING

A resume of drafting work for the year 1947 indicates that a great deal of time has been involved in mapping. Beat maps traced from aerial photographs, sketch maps, sanitary survey maps and plan and profile maps for septic tank installations

composed the group of nearly 500 linen tracings completed during the year. Most of these tracings were of more than standard G size drawings. This is, by far, the largest number of maps and charts ever made by State Health Department draftsmen in a single year. When added to the aerial photograph maps already made, it is noted that 20 counties in the state are now covered. In most instances the entire counties have been mapped. Those few beats not yet mapped are either not included in the various programs or are in the process of being completed. The objective, in this connection, is to have a complete set of beat maps (approximately 1,400) for the entire state, which ambitious program will provide a valuable collection of the most pertinent and current maps available.

During the year 93 plan and profile maps for school septic tank installations were made, which is tangible evidence of accumulated sanitation needs during the war years. Further expansion was indicated in the increased number of sketch maps needed for sanitary surveys and the information covering additional facilities recorded on maps previously made.

Routine work was also done for all bureaus and divisions of the State Health Department.

Approximately 5,000 prints of maps and charts were distributed during the year.

Part III of the Board's report was approved as was the report as a whole.

REVISION OF THE ROLLS

The next order of business being the revision of the Rolls of the Association, the Secretary was directed by President Chapman to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; and, third, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Barbour, Bibb, Calhoun, Chambers, Cherokee, Chilton, Clarke, Coffee, Colbert, Conecuh, Crenshaw, Cullman, Dallas, Dekalb, Elmore, Escambia, Franklin, Geneva, Hale, Henry, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lee, Madison, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pike, Randolph, Shelby, St. Clair, Sumter, Talladega, Tallapoosa, Walker, Washington, Wilcox, Winston—Total 47.

(b) County societies partially delinquent: In that they are not represented by delegates at this meeting of the Association: Blount, Bullock, But-

ler, Choctaw, Clay, Cleburne, Coosa, Covington, Dale, Etowah, Fayette, Limestone, Lowndes, Macon, Marengo, Pickens, Russell. In that an annual report has not been submitted: Tuscaloosa.—Total 18.

(c) County societies totally delinquent: Greene and Lawrence.—Total 2.

No objection being made as to the correctness of this report, the President directed the Secretary to write the Societies delinquent in report and dues and, failing to remove the delinquencies, to call the Societies to the attention of the State Board of Censors.

Whereupon the roll of County Medical Societies was declared closed until the next annual session of the Association.

The Secretary then said:

"In revising the Roll of Counsellors, five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the state, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing; and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision of the rolls was continued.

2. Revision of the Roll of Counsellors:

(a) Counsellors clear on the books: Abbott, Acker, Alison, Allgood, Anderson, Barber, Bell, Belue, Boyd, Bragg, Branch, Brown, Brunson, Cannon, Carraway, Carter, Chenault, Cloud, Cocke, Collier, Conwell, Craddock, Daves, Davis, Denison, Dodson, Donald, D. C., and J. M., Eskew, Ford, Foshee, Garber, Gibson, Gipson, Givhan, Goddard, Golden, Granger, Gresham, Grote, Hill, R. C. Hill, R. Lee; Hodges, Howell, Isbell, Jackson, Jones, C. T. Jones, J. Jaul, Kennedy, Killingsworth, Leatherwood, Lisenby, Martin, Meadows, Moore, C. W. C., Morgan, J. O., Morgan, J. Ralph, Noland, Oswalt, Owings, Parker, Partlow, Perdue, Riggs, Riser, Roan, Salter, Samford, Scarbrough, Segrest, Sewell, Sherrill, Simpson, H. M., Simpson, John W.; Skinner, Smith, Stabler, Stallworth, Tankersley, Thacker, Tillman, Waters, Watson, Weil, Weldon, White, Whiteside, Wilson, Woodruff, Wright.

In the absence of objection, the President ordered passed the names of these counsellors reported as clear on the books.

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: Dr. Fred W. Wilkerson.

- (2) Active Counsellors and Counsellors-Elect who have died: Drs. W. S. Chapman, W. Hill McCaslan, D. S. Moore, Jr., James Tankersley and Oliver W. Welch.
- (3) Active Counsellors who have moved: None.
- (4) Active Counsellors who have resigned: None.
- (d) Active Counsellors of twenty years' standing: Douglas L. Cannon and Frank G. Granger.
- (e) Counsellors-Elect who have properly qualified: Wallace A. Clyde, Henry A. Darby, James O. Finney, D. G. Gill, William G. McCown and B. W. McNease.

The President directed that the names of the deceased counsellors be transferred to the Book of the Dead; that those who have served for 20 years be added to the Roll of Life Counsellors; and that to the Roll of Active Counsellors there be added Drs. Clyde, Darby, Finney, Gill, McCown and McNease.

Whereupon the President declared the Roll of the College of Counsellors closed until the next annual session of the Association.

3. Revision of the Roll of Correspondents:

Dr. Andrew C. Ivy, the 1948 Jerome Cochran Lecturer, was added to the Roll of Correspondents.

4. Revision of the Roll of Officers:

Dr. J. Paul Jones of Camden was elected President; Dr. Frank Jordan of Huntsville, Vice-President of the Northeastern Division, to fill, until 1950, the unexpired term of Dr. J. O. Morgan who was elected a Censor in 1947; Dr. J. G. Daves of Cullman, Vice-President of the Northwestern Division for a term of four years, succeeding Dr. B. W. McNease; Dr. W. R. Carter of Repton, Vice-President of the Southwestern Division, to fill, until 1949, the unexpired term of Dr. Jones, elected President; Dr. E. G. Givhan, Jr., Birmingham, a Censor to complete the term, to expire in 1949, of Dr. Lloyd Noland, resigned; and Drs. French Craddock, Sr., Sylacauga, and John L. Branch, Montgomery, to succeed themselves as Censors.

Committees constitutionally provided to nominate Counsellors brought in the following nominations, and the nominees were elected by the Association: 1st District—R. D. Neal; 2nd—W. R. Carter, and Robert Parker; 3rd—Arthur Mazyck, C. T. Jones, P. P. Salter and G. R. Smith; 4th—J. F. Alison, W. M. Salter and W. F. Harper; 6th—M. H. Eskew and W. J. B. Owings; 7th—M. S. Whiteside; 8th—J. C. Bragg and A. M. Roan; 9th—R. E. Cloud, E. B. Robinson, Jr., and W. S. Littlejohn.

Miscellaneous Business

The Association, by a rising vote, thanked the Mobile County Medical Society for its

many courtesies during the 1948 meeting.

Invitation was accepted to meet in Montgomery in 1949.

President Jones and the other newly elected officers were presented, whereupon the Association was declared adjourned.

THE ROLL OF COUNSELLORS

REVISION OF 1948

LIFE COUNSELLORS

Name and Address	Date of Election
Acker, Paul Jerome Morris, Mobile (1)	1923
Alison, Samuel Blakemore, Minter (4)	1919
Ashcraft, Virgil Lee, Reform (7)	1919
Bedsole, James G., Jackson (1)	1922
Bondurant, Eugene DuBose, Mobile (1)	1894
Burdshaw, Shelby L., Headland (3)	1921
Caldwell, Edwin Valdivia, Huntsville (8)	1918
Cannon, Douglas L., Montgomery (2)	1928
Chenault, Frank L., Decatur (8)	1917
Dabney, Marye Y., Birmingham (9)	1923
Faulk, William M., Tuscaloosa (6)	1913
Gordon, Samuel A., Marion (6)	1913
Granger, Frank G., Ashford (3)	1928
Gresham, George L., Speigner (4)	1913
Guice, Charles Lee, Gadsden (5)	1899
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1896
Hayes, Charles Philips, Elba (3)	1920
Hayes, Julius Pope, Clanton (6)	1920
Heacock, Jos. D., Birmingham (9)	1912
Heflin, Wyatt, Birmingham (9)	1893
Hill, Robert L., Winfield (7)	1924
Hill, Robert Somerville, Montgomery (2)	1898
Howell, William Edward, Haleyville (7)	1918
Howle, James Augustus, Hartselle (8)	1895
Hubbard, T. Brannon, Montgomery (2)	1924
Jackson, Alva A., Florence (8)	1918
Leach, Sydney, Tuscaloosa (6)	1920
Lester, Belford S., Birmingham (9)	1923
Lightfoot, Phillip Malcolm, Shorter (3)	1918
Lull, Cabot, Birmingham (9)	1919
Lupton, Frank A., Birmingham (9)	1913
Martin, James Cordie, Cullman (7)	1917
Mason, James Monroe, Birmingham (9)	1918
Mayer, Kossuth Aaron, Lower Peach Tree (1)	1919
McAdory, Edward Dudley, Cullman (7)	1920
McCaain, William Jasper, Livingston (6)	1898
McCall, Daniel T., Mobile (1)	1923
McLeod, John Calvin, Bay Minette (2)	1911
McLester, James Somerville, Birmingham (9)	1913
Mohr, Chas. A., Mobile (1)	1909
Partlow, William Dempsey, Tuscaloosa (6)	1909
Ralls, Arthur W., Gadsden (5)	1919
Redden, Raymond Hollis, Sulligent (7)	1926
Rucker, Edmon W., Birmingham (9)	1922
Sankey, Howard J., Nauvoo (7)	1914
Scott, Walter F., Birmingham (9)	1922
Searcy, Harvey Brown, Tuscaloosa (6)	1923
Shropshire, Courtney W., Birmingham (9)	1923
Sledge, Edward S., Mobile (1)	1922
Speir, Phillip V., Greenville (2)	1917
Taylor, Woodie R., Town Creek (8)	1926
Thigpen, Charles Alston, Montgomery (2)	1900
Thomas, Eugene Marvin, Prattville (4)	1920
Waldrop, R. W., Bessemer (9)	1922
Walker, Alfred A., Birmingham (9)	1923
Walls, J. J., Alexander City (5)	1924
Ward, Henry Silas, Birmingham (9)	1915
Wilkinson, David Leonidas, Birmingham (9)	1902

Total 59

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of Elec- Expi- tion ration
Abbott, Chas. E., Tuscaloosa (6)	*1945 to 1952
Acker, Charles T., Montevallo (6)	*1944 to 1951
Alison, James F., Selma (4)	†1948 to 1954
Allgood, Homer W., Fairfield (9)	1944 to 1951
Anderson, Thos. J., Greensboro (6)	†1947 to 1953
Barber, William J., Butler (1)	1942 to 1949
Bell, J. Mac, Mobile (1)	1943 to 1950
Belue, Julius O., Athens (8)	*1944 to 1951
Boyd, Frank H., Opelika (3)	*1946 to 1953
Bragg, John C., Decatur (8)	*1948 to 1955
Branch, John L., Montgomery (2)	1944 to 1951
Brown, Elridge T., Cleveland (7)	*1944 to 1951
Brunson, Emmett T., Samson (3)	*1943 to 1950
Carraway, Chas. Newton, Birmingham (9)	1942 to 1949
Carter, William R., Repton (2)	†1948 to 1954
Chenault, Erskine M., Decatur (8)	*1942 to 1949
Cloud, Robert E., Ensley (9)	*1948 to 1955
Clyde, Wallace A., Birmingham (9)	1947 to 1954
Cocke, William T., Demopolis (1)	*1946 to 1953
Collier, James P., Tuscaloosa (6)	*1947 to 1954
Conwell, H. Earle, Birmingham (9)	1942 to 1949
Craddock, French H., Sylacauga (4)	†1946 to 1952
Darby, Henry A., Athens (8)	1947 to 1954
Daves, James G., Cullman (7)	*1945 to 1952
Davis, Lewis C., Gordo (7)	*1946 to 1953
Denison, George A., Birmingham (9)	1943 to 1950
Dodson, Robert B., Cullman (7)	1944 to 1951
Donald, Dan C., Birmingham (9)	1944 to 1951
Donald, Joseph M., Birmingham (9)	1946 to 1953
Eskew, M. H., Uniontown (6)	†1948 to 1954
Finney, James O., Gadsden (5)	1947 to 1954
Ford, Charles E., Roanoke (5)	*1946 to 1953
Foshee, Reuben A., Alexander City, Rt. 5 (5)	1944 to 1951
Garber, James R., Birmingham (9)	†1946 to 1952
Gibson, Edward Lee, Enterprise (3)	*1947 to 1954
Gill, Daniel G., Montgomery (2)	1947 to 1954
Gipson, Amos C., Gadsden (5)	1944 to 1951
Givhan, Edgar G., Jr., Birmingham (9)	1946 to 1953
Godard, Claud G., Fairhope (2)	1942 to 1949
Golden, William C., Clanton (6)	1944 to 1951
Gresham, Walter A., Russellville (7)	†1947 to 1953
Grote, Carl A., Huntsville (8)	*1944 to 1951
Hill, Robert C., York (6)	*1943 to 1950
Hill, R. Lee, Haleyville (7)	*1946 to 1953
Hodges, Rayford, Scottsboro (8)	*1942 to 1949
Howell, John V., Marion (6)	*1943 to 1950
Isbell, Arthur L., Albertville (5)	*1947 to 1954
Jackson, Albert C., Jasper (7)	*1947 to 1954
Jones, Carl T., Newville (3)	*1948 to 1955
Jones, J. Paul, Camden (1)	1943 to 1950
Kennedy, Hughes, Jr., Birmingham (9)	1943 to 1950
Killingsworth, Noah W., Brundidge (2)	*1946 to 1953
Leatherwood, Elbert F., Hayneville (2)	1944 to 1951
Lisenby, J. Otis, Atmore (2)	1943 to 1950
Martin, John A., Montgomery (2)	†1947 to 1953
McCown, William G., Huntsville (8)	1947 to 1954
McNease, Benjamin W., Fayette (7)	1947 to 1954
Meadows, James A., Birmingham (9)	1943 to 1950
Moore, C. W. C., Talladega (4)	*1944 to 1951
Morgan, J. Orville, Gadsden (5)	*1946 to 1953
Morgan, J. Ralph, Birmingham (9)	1943 to 1950
Noland, Lloyd, Fairfield (9)	†1943 to 1949

ACTIVE COUNSELLORS—Continued Date of
Elec- Expi-
tion ration

Oswalt, G. G., Mobile (1)	†1943 to 1949
Owings, W. J. B., Brent (6)	*1948 to 1955
Parker, Lorenzo D., Andalusia (2)	†1947 to 1953
Partlow, Rufus C., Tuscaloosa (6)	1943 to 1950
Perdue, James D., Mobile (1)	†1947 to 1953
Riggs, Frank W., Montgomery (2)	1943 to 1950
Riser, William H., Lafayette (5)	*1942 to 1949
Roan, Avery M., Decatur (8)	*1948 to 1955
Salter, Wilbur M., Anniston (4)	†1948 to 1954
Samford, Millard W., Opelika (3)	1946 to 1953
Scarbrough, B. C., Albertville (5)	*1942 to 1949
Segrest, Grady O., Mobile (1)	1942 to 1949
Sewell, John Ferris, Wetumpka (4)	*1947 to 1954
Sherrill, John D., Birmingham (9)	*1946 to 1953
Simpson, Harry M., Florence (8)	*1945 to 1952
Simpson, John W., Birmingham (9)	1942 to 1949
Skinner, Marcus, Selma (4)	*1946 to 1953
Smith, Gordon R., Ozark (3)	†1948 to 1954
Stabler, Lorenzo V., Greenville (2)	*1944 to 1951
Stallworth, William A., Frisco City (1)	*1944 to 1951
Thacker, Vincent J., Dothan (3)	*1942 to 1949
Tillman, John S., Clio (3)	*1942 to 1949
Waters, Hinton W., Opp (2)	*1946 to 1953
Watson, Jerre, Anniston (4)	*1945 to 1952
Weil, Clarence K., Montgomery (2)*	*1944 to 1951
Weldon, Joseph M., Mobile (1)	*1942 to 1949
White, Marvin S., Hamilton (7)	1946 to 1953
Whiteside, Maurice S., Cullman (7)	*1948 to 1955
Wilson, Frank C., Birmingham (9)	1942 to 1949
Woodruff, Gerald G., Anniston (4)	*1947 to 1954
Wright, David H., Berry (7)	†1946 to 1952
Total 93	

COUNSELLORS-ELECT

Harper, William F., Selma (4)	1948 to 1955
Littlejohn, Wilmot S., Birmingham (9)	1948 to 1955
Mazyck, Arthur, Dothan (3)	1948 to 1955
Neal, Ralph D., Grove Hill (1)	1948 to 1955
Parker, Robert, Montgomery (2)	1948 to 1955
Robinson, E. Bryce, Birmingham (9)	1948 to 1955
Salter, Paul P., Eufaula (3)	1948 to 1955

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1948, there were 1,652 members in the County Medical Societies. That would give one Counsellor to every 16.5 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

Names of Counsellors—W. T. Cocke, Marengo; W. J. Barber, Choctaw; R. D. Neal, Clarke; G. G. Oswalt, G. O. Segrest, J. M. Weldon, J. D. Perdue and J. Mac Bell, Mobile; W. A. Stallworth, Monroe; J. Paul Jones, Wilcox.

*Deceased

County	Members	Counsellors
Choctaw	7	1
Clarke	13	1
Marengo	14	1
Mobile	137	5
Monroe	8	1
Washington	2	0
Wilcox	10	1
	191	10

SECOND DISTRICT

Names of Counsellors—C. G. Godard, Baldwin; L. V. Stabler, Butler; W. R. Carter, Conecuh; L. D. Parker and H. W. Waters, Covington; J. O. Lisenby, Escambia; E. F. Leatherwood, Lowndes; J. L. Branch, F. W. Riggs, J. A. Martin, C. K. Weil,* Robert Parker and D. G. Gill, Montgomery; and N. W. Killingsworth, Pike.

County	Members	Counsellors
Baldwin	18	1
Butler	10	1
Conecuh	9	1
Covington	22	2
Crenshaw	10	0
Escambia	12	1
Lowndes	3	1
Montgomery	118	6
Pike	14	1
	216	14

THIRD DISTRICT

Names of Counsellors—J. S. Tillman and P. P. Salter, Barbour; E. L. Gibson, Coffee; G. R. Smith, Dale; E. T. Brunson, Geneva; C. T. Jones, Henry; V. J. Thacker and Arthur Mazyck, Houston; F. H. Boyd and M. W. Samford, Lee.

County	Members	Counsellors
Barbour	13	2
Bullock	3	0
Coffee	13	1
Dale	7	1
Geneva	9	1
Henry	8	1
Houston	27	2
Lee	18	2
Macon	6	0
Russell	5	0
	109	10

FOURTH DISTRICT

Names of Counsellors—W. M. Salter, Jerre Watson and G. G. Woodruff, Calhoun; J. F. Allison, W. F. Harper and Marcus Skinner, Dallas; J. F. Sewell, Elmore; and French Craddock and C. W. C. Moore, Talladega.

County	Members	Counsellors
Autauga	7	0
Calhoun	39	3
Clay	5	0
Coosa	2	0
Dallas	36	3
Elmore	10	1

*Deceased.

St. Clair	10	0
Talladega	26	2
	135	9

FIFTH DISTRICT

Names of Counsellors—W. H. Riser, Chambers; A. C. Gipson, J. O. Finney and J. O. Morgan, Etowah; A. L. Isbell and B. C. Scarbrough, Marshall; C. E. Ford, Randolph; and R. A. Foshee, Tallapoosa.

County	Members	Counsellors
Chambers	17	1
Cherokee	3	0
Cleburne	4	0
DeKalb	15	0
Etowah	63	3
Marshall	20	2
Randolph	9	1
Tallapoosa	15	1
	146	8

SIXTH DISTRICT

Names of Counsellors—W. J. B. Owings, Bibb; W. C. Golden, Chilton; T. J. Anderson, Hale; M. H. Eskew and J. V. Howell, Perry; C. T. Acker, Shelby; R. C. Hill, Sumter; and J. P. Collier, R. C. Partlow and C. E. Abbott, Tuscaloosa.

County	Members	Counsellors
Bibb	13	1
Chilton	12	1
Greene	6	0
Hale	7	1
Perry	8	2
Shelby	15	1
Sumter	14	1
Tuscaloosa	51	3
	126	10

SEVENTH DISTRICT

Names of Counsellors—E. T. Brown, Blount; R. B. Dodson, J. G. Daves and M. S. Whiteside, Cullman; B. W. McNease and D. H. Wright, Fayette; W. A. Gresham, Franklin; M. S. White, Marion; L. C. Davis, Pickens; A. C. Jackson, Walker; and R. Lee Hill, Winston.

County	Members	Counsellors
Blount	11	1
Cullman	18	3
Fayette	10	2
Franklin	15	1
Lamar	9	0
Marion	10	1
Pickens	10	1
Walker	27	1
Winston	9	1
	119	11

EIGHTH DISTRICT

Names of Counsellors—Rayford Hodges, Jackson; H. M. Simpson, Lauderdale; H. A. Darby and J. O. Belue, Limestone; W. G. McCown and C. A. Grote, Madison; and E. M. Chenault, J. C. Bragg and A. M. Roan, Morgan.

County	Members	Counsellors	Place and President	Year
Colbert	19	0	Montgomery—Richard Frazer Michel	1870
Jackson	11	1	Mobile—Francis Armstrong Ross	1871
Lauderdale	26	1	Huntsville—Thomas Childress Osborne	1872
Lawrence	7	0	Tuscaloosa—George Ernest Kumpe	1873
Limestone	13	2	Selma—George Augustus Ketchum	1874
Madison	35	2	Montgomery—Job Sobieski Weatherly	1875
Morgan	28	3	Mobile—John Jefferson Dement	1876
	139	9	Birmingham—Edward Davies McDaniel	1877
			Eufaula—Peter Bryce	1878
			Selma—Robert Dickens Webb	1879
			Huntsville—Edmond Pendleton Gaines	1880
			Montgomery—William Henry Anderson	1881
			Mobile—John Brown Gaston	1882
			Birmingham—Clifford Daniel Parke	1883
			Selma—Mortimer Harvey Jordan	1884
			Greenville—Benjamin Hogan Riggs	1885
			Anniston—Francis Marion Peterson	1886
			Tuscaloosa—Samuel Dibble Seelye	1887
			Montgomery—Edward Henry Sholl	1888
			Mobile—Milton Columbus Baldrige	1889
			Birmingham—Charles Higgs Franklin	1890
			Huntsville—William Henry Sanders	1891
			Montgomery—Benjamin James Baldwin	1892
			Selma—James Thomas Searcy	1893
			Birmingham—Thaddeus Lindley Robertson	1894
			Mobile—Richard Matthew Fletcher	1895
			Montgomery—William Henry Johnston	1896
			Selma—Barckley Wallace Toole	1897
			Birmingham—Luther Leonidas Hill	1898
			Mobile—Henry Altamont Moody	1899
			Montgomery—John Clarke LeGrande	1900
			Selma—Russell McWhorter Cunningham	1901
			Birmingham—Edwin Lesley Marechal	1902
			Talladega—Glenn Andrews	1903
			Mobile—Matthew Bunyan Cameron	1904
			Montgomery—Capers Capehart Jones	1905
			Birmingham—Eugene DuBose Bondurant	1906
			Mobile—George Tighlman McWhorter	1907
			Montgomery—Samuel Wallace Welch	1908
			Birmingham—Benjamin Leon Wyman	1909
			Mobile—Wooten Moore Wilkerson	1910
			Montgomery—Wyatt Heflin Blake	1911
			Birmingham—Lewis Coleman Morris	1912
			Mobile—Harry Tutwiler Inge	1913
			Montgomery—Robert S. Hill	1914
			Birmingham—Benjamin Britt Simms	1915
			Mobile—James Norment Baker	1916
			Montgomery—Henry Green	1917
			Birmingham—William Dempsey Partlow	1918
			Mobile—Isaac LaFayette Watkins	1919
			Anniston—James Somerville McLester	1920
			Montgomery—Louis William Johnston	1921
			Birmingham—Dyer F. Talley	1922
			Mobile—Walter S. Britt	1923
			Montgomery—W. W. Harper	1924
			Birmingham—J. D. Heacock	1925
			Mobile—C. A. Mohr	1926
			Montgomery—A. L. Harlan	1927
			Birmingham—John D. S. Davis	1928
			Mobile—E. V. Caldwell	1929
			Montgomery—L. E. Broughton	1930
			Birmingham—W. G. Harrison	1931
			Mobile—Toulmin Gaines	1932
			Montgomery—Samuel Kirkpatrick	1933
			Birmingham—James R. Garber	1934
			Mobile—William M. Cunningham	1935
			Montgomery—Charles A. Thigpen	1936

NINTH DISTRICT

Names of Counsellors—J. D. Sherrill, Lloyd Noland, J. R. Garber, R. E. Cloud, C. N. Carraway, H. Earle Conwell, J. W. Simpson, F. C. Wilson, G. A. Denison, Hughes Kennedy, Jr., J. A. Meadows, Ralph Morgan, D. C. Donald, Joe M. Donald, E. G. Givhan, Jr., H. W. Allgood, W. A. Clyde, E. Bryce Robinson, and W. S. Littlejohn.

County	Members	Counsellors
Jefferson	470	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City	1909
W. S. Thayer, Baltimore	1921
Lewellys F. Barker, Baltimore	1921
Rudolph Matas, New Orleans	1921
John B. Elliott, Jr., New Orleans	1921
Henry A. Christian, Boston	1921
H. A. Royster, Raleigh, N. C.	1926
Stewart Roberts, Atlanta	1927
G. Canby Robinson, Baltimore	1928
Louis B. Wilson, Rochester, Minn.	1930
A. Benson Cannon, New York	1932
J. Shelton Horsley, Richmond	1933
Russell L. Cecil, New York	1934
George H. Semken, New York	1935
Frank H. Lahey, Boston	1937
T. M. McMillan, Philadelphia	1938
George T. Pack, New York	1939
E. V. McCollum, Baltimore	1940
Harvey B. Stone, Baltimore	1942
Albert C. Furstenberg, Ann Arbor	1943
Tinsley R. Harrison, Dallas, Texas	1944
Alton Ochsner, New Orleans	1946
Reginald Fitz, Boston	1947
Andrew C. Ivy, Chicago	1948

SCHEDULE OF THE ANNUAL SESSIONS
AND PRESIDENTS SINCE THE RE-
ORGANIZATION IN 1868

Place and President	Year
Selma—Albert Galatin Mabry	1868
Mobile—Albert Galatin Mabry	1869
Montgomery—Charles A. Thigpen	1936

<i>Place and President</i>	<i>Year</i>
Birmingham—Lloyd Noland	1937
Mobile—E. S. Sledge	1938
Montgomery—Seale Harris, Sr.	1939
Birmingham—M. S. Davie	1940
Mobile—Samuel A. Gordon	1941
Montgomery—James M. Mason	1942
Birmingham—Harvey B. Searcy	1943
Montgomery—Fred W. Wilkerson	1944
Meeting Cancelled—Walter F. Scott	1945
Birmingham—Walter F. Scott	1946
Birmingham—Carl A. Grote	1947
Mobile—Jesse P. Chapman	1948

SECRETARIES OF THE ASSOCIATION

1852-1854	George A. Ketchum
1854-1855	R. Miller
1869-1873	Jerome Cochran
1874-1878	B. H. Riggs
1879-1892	T. A. Means
1893-1897	J. R. Jordan
1897-1904	G. P. Waller
1904-1906	L. C. Morris
1906-1915	J. N. Baker
1915-1923	H. G. Perry
1923-1924	Douglas L. Cannon
1924-1930	B. B. Simms
1930-1940	Douglas L. Cannon

TREASURERS OF THE ASSOCIATION

1854-1855	W. P. Reese
1869-1898	W. C. Jackson
1898-1915	H. G. Perry
1915-1939	J. U. Ray

SECRETARY-TREASURERS OF THE ASSOCIATION

1940-	Douglas L. Cannon
-------	-------------------

SCHEDULE OF JEROME COCHRAN LECTURERS

- 1899—J. T. Searcy, Tuscaloosa—What Is Insanity?
 1900—Wm. Osler, Baltimore—Not present.
 1901—Wm. Osler, Baltimore—Not present.
 1902—Nathan Bozeman, New York—Declined.
 1903—George H. Price, Nashville—The History of Medicine.
 1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
 1905—Robert Abbe, New York—The Problems of Surgery.
 1906—Joseph Collins, New York—Arteriosclerosis.
 1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
 1908—E. L. Marechal, Mobile—Absent.
 1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
 1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.
 1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.

- 1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.
 1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.
 1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.
 1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.
 1916—Howard A. Kelly, Baltimore—Radium Therapy.
 1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.
 1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.
 1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.
 1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.
 1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.
 1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.
 1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.
 1924—James S. Stone, Boston—Abdominal Diagnoses in Children.
 1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.
 1926—Stewart Roberts, Atlanta—The Heart Muscle.
 1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.
 1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.
 1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.
 1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.
 1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.
 1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.
 1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.
 1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.
 1935—George H. Semken, New York—A Consideration of Tumors of the Breast.
 1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.
 1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.
 1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.
 1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.
 1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.
 1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

1942—Harvey B. Stone, Baltimore—Biliary Diseases as Seen by a Surgeon.

1943—A. C. Furstenberg, Ann Arbor—Objectives in Medical Education.

1944—Tinsley R. Harrison, Dallas, Texas—The Value and Limitations of Laboratory Tests in the Practice of Medicine.

1945—Meeting Cancelled.

1946—Alton Ochsner, New Orleans—The Influence of Serendipity on Medicine.

1947—Reginald Fitz, Boston—The Early Characteristics of Certain Chronic Diseases.

1948—Andrew C. Ivy, Chicago—The Gallbladder in Health and Disease.

OFFICERS OF THE ASSOCIATION

PRESIDENT

J. Paul Jones (1949) Camden

VICE-PRESIDENTS

W. R. Carter (1949) Repton

Frank Jordan (1950) Huntsville

E. L. Gibson (1951) Enterprise

J. G. Daves (1952) Cullman

SECRETARY-TREASURER

Douglas L. Cannon (1950) Montgomery

THE STATE BOARD OF CENSORS

E. V. Caldwell, Chm. (1950) Huntsville

J. O. Morgan (1950) Gadsden

E. G. Givhan, Jr. (1949) Birmingham

J. D. Perdue (1949) Mobile

John W. Simpson (1951) Birmingham

K. A. Mayer (1951) Lower Peach Tree

T. B. Hubbard (1952) Montgomery

C. E. Abbott (1952) Tuscaloosa

French Craddock (1953) Sylacauga

John L. Branch (1953) Montgomery

STATE HEALTH OFFICER

D. G. Gill (1952) Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN MEDICAL ASSOCIATION

Delegate—Lloyd Noland Fairfield

Alternate—D. G. Gill Montgomery

(Terms expire with the 1949 session of the American Medical Association)

Delegate—C. A. Grote Huntsville

Alternate—G. A. Denison Birmingham

(Terms expire with the 1950 session of the American Medical Association)

COMMITTEE ON MEDICAL SERVICE AND PUBLIC RELATIONS

C. A. Grote, Chairman, Huntsville .. 1949

Frank Jordan, Huntsville 1949

E. L. Gibson, Enterprise 1950

W. R. Carter, Repton 1950

F. W. Riggs, Montgomery 1951

Arthur Mazyck, Dothan 1951

E. G. Givhan, Jr., Birmingham 1952

B. W. McNease, Fayette 1952

J. G. Daves, Cullman 1953

John Day Peake, Mobile 1953

J. Paul Jones, Camden *ex officio*

Douglas L. Cannon, Montgomery *ex officio*

COMMITTEE ON MENTAL HYGIENE

F. A. Kay, Chairman, Birmingham 1950

E. S. Sledge, Mobile 1949

J. S. Tarwater, Tuscaloosa 1951

COMMITTEE ON MATERNAL AND CHILD HEALTH

T. M. Boulware, Chairman, Birmingham 1951

Hughes Kennedy, Jr., Birmingham 1949

A. E. Thomas, Montgomery 1950

COMMITTEE ON CANCER CONTROL

J. P. Chapman, Chairman, Selma 1952

F. H. Craddock, Jr., Sylacauga 1949

John Day Peake, Mobile 1950

John L. Branch, Montgomery 1951

Roger D. Baker, Birmingham 1953

COMMITTEE ON PREVENTION OF BLINDNESS AND DEAFNESS

W. B. Hardy, Chairman, Birmingham 1949

Karl Benkwith, Montgomery 1950

R. J. Grayson, Selma 1951

COMMITTEE ON POSTGRADUATE STUDY

Ralph McBurney, Chairman, Birmingham 1951

G. O. Segrest, Mobile 1949

Cabot Lull, Birmingham 1950

COMMITTEE ON INDUSTRIAL MEDICINE

Benjamin Meyer, Chairman, Birmingham 1951

H. Earle Conwell, Birmingham 1949

Marcus Skinner, Selma 1950

COMMITTEE ON PHYSICIAN-DRUGGIST RELATIONSHIPS

R. E. Cloud, Chairman, Ensley 1951

W. M. Salter, Anniston 1949

R. R. Kracke, Birmingham 1950

COMMITTEE ON ANESTHESIOLOGY

E. B. Robinson, Jr., Chm., Birmingham 1950

Alice McNeal, Birmingham 1949

Sid W. Collier Birmingham 1951

COMMITTEE ON TUBERCULOSIS

Paul W. Auston, Chairman, Shawmut 1949

A. H. Russakoff, Birmingham 1950

L. O. Davenport, Birmingham 1951

REGISTRATION AT THE EIGHTIETH ANNUAL SESSION, MOBILE

APRIL 15-17, 1948

LIFE COUNSELLORS

Acker, P. J. M., Mobile
Alison, S. B., Minter

Bedsole, J. G., Jackson
Caldwell, E. V., Huntsville

Dabney, M. Y., Birmingham
Harris, Seale, Birmingham

Heacock, J. D., Birmingham
Hill, R. L., Winfield
Howell, W. E., Haleyville
Hubbard, T. B., Montgomery
Mason, J. M., Birmingham
Mayer, K. A., Lower Peach Tree

McAdory, E. D., Cullman
McCall, D. T., Mobile
McLeod, J. C., Bay Minette
McLester, J. S., Birmingham
Mohr, C. A., Mobile
Rucker, E. W., Birmingham

Scott, W. F., Birmingham
Searcy, H. B., Tuscaloosa
Sledge, E. S., Mobile
Speir, P. V., Greenville
Taylor, W. R., Town Creek
Walker, A. A., Birmingham

ACTIVE COUNSELLORS

Abbott, C. E., Tuscaloosa
Acker, C. T., Montevallo
Alison, J. F., Selma
Anderson, T. J., Greensboro
Bell, J. Mac, Mobile
Boyd, F. H., Opelika
Branch, J. L., Montgomery
Brown, E. T., Cleveland
Brunson, E. T., Samson
Cannon, D. L., Montgomery
Carraway, C. N., Birmingham
Carter, W. R., Repton
Chenault, E. M., Decatur
Clyde, W. A., Birmingham
Cocke, W. T., Demopolis
Daves, J. G., Cullman
Denison, G. A., Birmingham
Donald, D. C., Birmingham
Donald, J. M., Birmingham
Eskew, M. H., Uniontown
Ford, C. E., Roanoke
Foshee, R. A., Alexander City

Gill, D. G., Montgomery
Gipson, A. C., Gadsden
Givhan, E. G., Birmingham
Godard, C. G., Fairhope
Golden, W. C., Clanton
Granger, F. G., Ashford
Grote, C. A., Huntsville
Hill, R. C., York
Hill, R. L., Haleyville
Hodges, Rayford, Scottsboro
Isbell, A. L., Albertville
Jackson, A. C., Jasper
Jones, C. T., Newville
Jones, J. Paul, Camden
Kennedy, Hughes, Jr., B'ham
Martin, J. A., Montgomery
McCown, W. G., Huntsville
McNease, B. W., Fayette
Moore, C. W. C., Talladega
Morgan, J. O., Gadsden
Morgan, J. Ralph, Birmingham
Oswalt, G. G., Mobile

Owings, W. J. B., Brent
Parker, L. D., Andalusia
Partlow, R. C., Tuscaloosa
Perdue, J. D., Mobile
Riggs, F. W., Montgomery
Roan, A. M., Decatur
Salter, W. M., Anniston
Segrest, G. O., Mobile
Sewell, J. F., Wetumpka
Simpson, J. W., Birmingham
Skinner, Marcus, Selma
Smith, G. R., Ozark
Stabler, L. V., Greenville
Stallworth, W. A., Frisco City
Thacker, V. J., Dothan
Tillman, J. S., Clio
Watson, Jerre, Anniston
Weil, C. K., Montgomery
Weldon, J. M., Mobile
Woodruff, G. G., Anniston

DELEGATES

Autauga: E. M. Moore, Prattville
Baldwin: W. C. Holmes, Foley;
H. C. Jordan, Fairhope
Barbour: Kendall Eppes, Eu-
faula; Nell R. Eppes, Eufaula
Bibb: A. C. Pratt, Jr., Centre-
ville
Calhoun: J. D. Rayfield, Jack-
sonville; W. V. Stough, Annis-
ton
Chambers: W. L. Cowles, Shaw-
mut; W. G. Wood, Lafayette
Cherokee: S. C. Tatum, Centre
Chilton: C. R. Moore, Clanton
Clarke: J. C. Godbold, Whatley;
R. D. Neal, Grove Hill
Coffee: E. G. Bragg, Elba; G. L.
Weidner, Enterprise
Colbert: R. D. Wright, Sheffield
Conecuh: R. L. Yeargan, Ever-
green
Crenshaw: L. A. Windham, Lu-
verne
Cullman: J. C. Chambliss, Cull-
man
Dallas: W. E. Ehlert, Selma; W.
F. Harper, Selma; Kenneth
Luckie, Selma
DeKalb: J. N. Chitwood, Ft.
Payne; C. B. Richey, Collins-
ville
Elmore: C. S. Cotlin, Jr., We-
tumpka; E. O. Majure, Tallas-
see

Escambia: G. T. Perry, Brewton;
A. J. Treherne, Atmore
Franklin: W. H. Spruell, Russell-
ville; W. E. Wilson, Russellville
Geneva: H. B. Strickland, Jr.,
Hartford
Hale: E. T. Norman, Greensboro
Henry: C. T. Martin, Headland;
L. P. Shell, Abbeville
Houston: W. T. Burkett, Dothan;
W. H. Turner, Dothan
Jackson: M. H. Lynch, Scotts-
boro; E. L. Trammell, Scotts-
boro
Jefferson: T. M. Boulware,
Birmingham; J. G. Galbraith,
Birmingham; W. S. Littlejohn,
Birmingham; L. C. Posey,
Birmingham; E. B. Robinson,
Jr., Birmingham; Landon Tim-
berlake, Birmingham; S. S.
Underwood, Birmingham
Lamar: J. M. Roberts, Vernon
Lauderdale: W. C. Simpson,
Florence
Lee: B. F. Thomas, Auburn
Madison: R. C. Bibb, Huntsville;
M. M. Duncan, Huntsville
Marion: M. C. Hollis, Winfield
Marshall: M. T. Hunt, Boaz
Mobile: A. D. Henderson, Mobile;
G. W. Newburn, Jr., Mobile;
H. S. J. Walker, Mobile

Monroe: T. E. Nettles, Monroe-
ville
Montgomery: K. B. Benkwith,
Montgomery; A. D. Cowles,
Ramer; J. W. Perry, Montgom-
ery; W. H. Y. Smith, Mont-
gomery
Morgan: M. E. Barrett, Decatur;
T. M. Guyton, Decatur
Perry: A. F. Wilkerson, Marion
Pike: W. H. Abernethy, Troy;
T. D. Cowles, Troy
Randolph: J. R. Manley, Roanoke
Shelby: L. H. Hubbard, Monte-
vallo; S. L. Shafferman, Co-
lumbiana
St. Clair: T. G. Nelson, Pell City
Sumter: D. C. Byrne, Bellamy;
J. C. McDaniel, York
Talladega: L. G. Cole, Talladega;
D. P. Dixon, Talladega
Tallapoosa: J. T. Banks, Dade-
ville; J. R. Chapman, Alexan-
der City
Tuscaloosa: W. D. Anderson,
Tuscaloosa; J. H. Goode, Tus-
caloosa
Walker: C. E. Ginther, Gorgas;
T. J. Payne, Jasper
Washington: W. E. Kimbrough,
Chatom
Wilcox: R. E. Dixon, Alberta; J.
A. Thompson, Pine Apple
Winston: J. I. Mitchell, Haley-
ville

MEMBERS

A

Abernethy, W. L., Flomaton
Adams, M. Vaun, Mobile
Amendola, A. A., Mobile
Anderson, B. F., Sellers
Andrew, James, Cordova
Armistead, J. R., Prichard
Armistead, S. D., Robertsdale
Austin, B. F., Decatur, Ga.
Auston, P. W., West Point, Ga.

B

Barnes, J. M., Montgomery
Baumhauer, J. H., Mobile
Beck, J. E., Mobile
Berrey, Ivan C., Birmingham
Berrey, Ruth R., Birmingham
Blake, W. A., Mobile
Boggs, L. K., Birmingham
Boozer, T. S., Montgomery
Boudreau, F. T., Mobile
Brannon, W. T., Montgomery
Britton, W. R., Montgomery
Brown, A. J., Mobile
Brown, H. G., Florence
Brown, H. M., Birmingham
Brown, L. L., Mobile
Bryant, P. A., Bay Minette
Burke, D. W., Mobile
Burrett, J. B., Birmingham
Bush, J. D., Gadsden

C

Cannon, E. R., Vredenburgh
Carmichael, J. L., Birmingham
Carpenter, B. S., Fairfield
Carraway, B. M., Birmingham
Chapman, J. P., Selma
Chason, O. L., Mobile
Clarke, N. R., Jr., Mobile
Clemmons, L. H., Brewton
Cleveland, C. M., Mobile
Coleman, G. C., Fairfield
Coleman, W. E., Birmingham
Connell, I. L., Jacksonville, Fla.
Cowden, A. M., Mobile
Cox, D. D., Sheffield
Coyle, Dan J., Birmingham

D

Davidson, A. W., Bessemer
Davidson, M. T., Birmingham
Davie, N. T., Anniston
Davis, C. S., Mobile
Davis, J. E., Mobile
Davis, J. W., Jr., Montgomery
Day, Edward, Maplesville
Day, Jane M., Montgomery
Day, R. C., Montgomery
Dix, A. S., Mobile
Dodson, J. H., Mobile
Donald, C. J., Birmingham
Donaldson, B. E., Carbon Hill
Douglas, G. F., Birmingham
Dumas, J. F., Mobile

E

Eddins, W. W., Monroeville
Edwards, W. A., Wetumpka
Eichold, Samuel, Mobile
England, F. T., Mobile
England, J. T., Mobile

F

Farish, C. G., Moulton
Flowers, J. H., Newton
Fonde, W. G., Mobile

G

Gaines, Toulmin, Mobile
Gaines, W. D., Atmore
Gay, N. S., Whistler
Gayden, L. R., Montgomery
Gilchrist, P. P., Mobile
Gillespie, J. P., Gadsden
Glenn, E. B., Birmingham
Graham, J. B., Mobile
Green, R. C., Birmingham
Grimes, J. T., Enterprise
Guthrie, R. F., Birmingham
Gwynn, H. B., Mobile

H

Hagood, D. S., Montgomery
Hail, R. A., Robertsdale
Hale, R. E., Bellamy
Hamm, Pat, Huntsville
Hannon, W. C., Mobile
Hargis, E. H., Birmingham
Harris, Edward A., Birmingham
Harris, Esau A., Bessemer
Havnes, Walter, Birmingham
Heiter, W. L., Mobile
Hill, Luther L., Montgomery
Hill, V. H., Mobile
Hirsh, J. E., Birmingham
Hodges, E. J., Scottsboro
Hodgson, P. M., Stockton
Hollis, L. W., Mobile
Hope, J. C., Sr., Mobile
Hope, J. C., Jr., Mobile
Hough, J. S., Montgomery
Howard, P. J., Mobile
Hudson, V. T., Mobile
Hurst, J. C., Opp

I

Inge, J. T., Mobile
Issos, D. N., Birmingham

J

Jackson, C. A., York
Jenkins, J. F., Jr., Birmingham
Johnson, G. T., Mobile
Johnson, J. F., Gardendale
Johnston, J. C., Chapman
Jones, W. C., Florence
Jones, W. N., Birmingham
Jordan, J. S., Birmingham
Jordan, O. L., Tuscaloosa

Jordan, W. F., Huntsville
Joseph, Kellie, Birmingham

K

Kaiser, E. N., Montgomery
Kay, F. A., Birmingham
Kesmodel, K. F., Birmingham
Kimbrough, B. B., Mobile
King, R. T., Jackson
Kinkead, Kyle, Birmingham
Kirklin, M. A., Mobile
Kracke, R. R., Birmingham

L

Lamar, C. L., Birmingham
Lee, A. B., Lanett
Lester, R. P., Mobile
Lewis, T. K., Birmingham
Leyden, H. A., Anniston
Lightcap, C. A., Mobile
Linder, Hugh, Birmingham
Little, J. H., Mobile
Little, S. C., Birmingham

M

Marshall, W. L., Langdale
Mason, M. H., Greenville
McCarn, O. C., Birmingham
McClure, H. C., Mobile
McLean, C. C., Birmingham
McLester, J. B., Birmingham
McNeal, Alice M., Birmingham
McVay, L. V., Mobile
Meeker, W. R., Mobile
Miller, J. A., Wylam
Minnich, W. C., Mobile
Minor, W. H., Mobile
Mitchell, G. J., Mobile
Moody, Maxwell, Tuscaloosa
Moore, E. G., Tallassee
Moorer, M. L., Mobile
Morgan, P. A., Jr., Birmingham
Morton, E. D., Prichard
Moss, J. E., Mobile
Motley, S. D., Birmingham
Mulherin, H. G., Mobile
Mullendore, M. M., Sheffield
Murphy, S. S., Mobile
Muscat, J. O., Mobile
Muscat, V. P., Mobile

N

Nash, J. C., Huntsville
Nelson, W. B., Bay Minette
Nethery, S. J., Belle Mina
Newdrop, John, Washington,
D. C.

O

O'Connell, G. A., Anniston
O'Gwynn, J. C., Jr., Mobile

P

Parsons, W. S., Mobile
Partridge, C. V., Mobile
Peake, J. D., Mobile

Pitman, J. J., Mobile
Porter, Ralph, Mobile
Prescott, W. E., Jr., Birmingham

R

Reaves, J. U., Mobile
Reynolds, F. D., Montgomery
Riser, W. H., Jr., Birmingham
Roach, A. N. T., Mobile
Roberts, M. J., Mobile
Roe, L. W., Mobile
Ross, C. H., Mobile
Rosser, W. J., Birmingham
Rouse, C. C., Mobile
Rowe, H. S., Mt. Vernon
Rowe, J. F., Mobile
Rumpanos, S. N., Mobile
Russell, R. O., Birmingham

S

Salter, P. P., Eufaula
Sanders, J. G., Mobile
Savage, C. H., Sr., Mobile
Savage, C. H., Jr., Mobile
Scales, W. W., Mobile
Sellers, D. F., Mobile
Sellers, W. L., Jr., Mobile
Shaddix, M. L., Gadsden
Shamblin, W. G., Tuscaloosa
Shaw, R. E., Whatley
Shell, J. R., Abbeville
Sherer, R. J., Birmingham

Sherman, C. R., Bay Minette
Simmons, S. C., Fairfax
Sims, J. A., Renfroe
Smith, Greene, Ensley
Smith, J. C., Birmingham
Sorrell, L. E., Birmingham
Sparks, D. H., Birmingham
Speir, R. C., Birmingham
Spies, T. D., Birmingham
Stabler, A. A., Greenville
Stabler, A. L., Birmingham
St. Amant, C. P., Jr., Grove Hill
Stephens, S. H., Mobile
Stephens, W. C., Mobile
Stewart, R. L., Birmingham
Stewart, Vera B., Birmingham
Stickley, C. S., Montgomery
Sumner, I. C., Mobile

T

Taylor, J. L., Mobile
Terhune, S. R., Birmingham
Terrill, J. W., Fairfield
Thomas, A. E., Montgomery
Thompson, W. A., Citronelle
Tisdale, W. C., Mt. Vernon
Turlington, L. F., Birmingham
Tyler, R. E., Birmingham

U

Upchurch, S. E., Birmingham

V

Van Wezel, Norman, Foley

W

Warren, C. M., Jr., Mobile
Webb, Virginia E., Mobile
Webster, H. N., Jr., Mobile
Weldon, H. S., Lanett
Whitaker, J. E., Huntsville
White, W. E., Anniston
Wilkerson, W. W., Montgomery
Williams, C. O., West Point, Ga.
Williams, J. H., Birmingham
Williams, K. B., Hartford
Wilson, C. H., Birmingham
Wilson, J. D., Birmingham
Wilson, J. M., Mobile
Wilson, R. K., Montgomery
Winsor, C. W., Mobile
Wise, I. M., Mobile
Wood, A. A., Mobile
Word, Buford, Birmingham

Y

Yemm, W. A., Mobile

Z

Zieman, A. H., Mobile
Zieman, J. A., Mobile
Zieman, S. A., Mobile

VISITORS

Dr. O. A. Abbott, Atlanta, Ga.
Dr. Robert L. Bennett, Warm Springs, Ga.
Dr. W. J. Brown, Birmingham
Dr. A. J. Butt, Pensacola, Fla.
Dr. L. T. Byars, St. Louis, Mo.
Dr. W. A. Campbell, Colo. Springs, Colo.
Dr. Don F. Cathcart, Atlanta, Ga.
Dr. Dan W. Chapman, Selma
Dr. D. H. Clark, Brookley Field, Ala.
Dr. G. N. Click, Pensacola, Fla.
Dr. V. S. Counsellor, Rochester, Minn.
Dr. W. C. Earle, Fulton, Ga.
Dr. R. C. Eley, Moss Point, Miss.
Dr. E. C. Ernst, St. Louis, Mo.
Dr. J. F. Fargason, Port Sulphur, La.
Dr. J. W. Flemmings, Kilgore, Texas
Dr. Mayo Flynt, Meridian, Miss.
Dr. G. H. Fonde, Mobile
Dr. Mary Hayes, Walnut Creek, Calif.
Dr. H. R. Hennessy, Chicago, Ill.
Dr. G. L. Johnson, Montgomery
Dr. J. S. LaDue, New York City
Dr. M. J. Lingo, Panama City, Fla.
Dr. J. N. Lockard, Pascagoula, Miss.

Dr. Titus Manasco, Carbon Hill
Dr. E. L. McCafferty, New Orleans, La.
Dr. S. B. McIlwain, Pascagoula, Miss.
1st. Lt. C. W. Merritt, Mobile
1st. Lt. J. V. Minor, Jr., Mobile
Dr. R. F. Monroe, Louisville, Ky.
Dr. W. J. Neely, Mobile
Dr. Mayer Newhauser, Mobile
Dr. Lewis Norman, Jr., West Point, Ga.
Dr. O. M. Otts, Jr., Birmingham
Dr. Neal Owens, New Orleans, La.
Dr. H. G. Poncher, Chicago, Ill.
Dr. S. P. Reimann, Philadelphia, Pa.
Dr. A. B. Rivers, Rochester, Minn.
Dr. G. L. Ross, Birmingham
Dr. Pierce Rucker, Richmond, Va.
Dr. F. O. Schmidt, Ocean Springs, Miss.
Dr. W. J. Senter, Atlanta, Ga.
Dr. J. L. Spiceland, Lucedale, Miss.
Dr. E. F. Stegen, Chicago, Ill.
Dr. J. Turberville, Century, Fla.
Dr. P. P. Volpitto, Augusta, Ga.
Dr. R. S. Weinhaus, Mobile

Dr. Frank Whitacre, Memphis, Tenn.
Dr. R. L. Worcester, Montgomery
Mrs. O. A. Abbott, Atlanta, Ga.
Mrs. T. J. Anderson, Greensboro
Mrs. G. L. Bailes, Birmingham
Mrs. Nina Basham, Birmingham
Mrs. H. G. Brown, Florence
Annie L. Crawford, Montgomery
Mrs. Ray Meade, Birmingham
Mrs. W. J. B. Owings, Brent
Miss A. W. Pickle, Selma
Fannie Ray, Chattanooga, Tenn.
Mrs. C. B. Richey, Jr., Collinsville
Mrs. Pierce Rucker, Richmond, Va.
Mrs. Russell Sherman, Bay Minette
Mrs. A. E. Thomas, Montgomery
May Wainwright, Mobile
Mrs. Dorothy E. Weil, Montgomery
Mrs. J. D. Wilson, Birmingham
Mrs. R. K. Wilson, Montgomery
H. H. Altman, Birmingham
Holland Anderson, Birmingham
J. B. Arnold, New York City
James Arrington, Collins, Miss.
W. E. Avery, Decatur, Ga.
S. L. Avner, Montgomery
H. E. Bartee, Mobile
Bob Bond, New Orleans, La.

W. W. Bonds, Birmingham	J. V. Henderson, Birmingham	P. W. McDonald, New York City
A. D. Boutwell, Birmingham	R. G. Hicks, Birmingham	M. L. McNutt, Birmingham
J. G. Box, Birmingham	J. W. Hodges, Birmingham	W. C. Monbin, Jasper
J. W. Bradley, Jr. Chattanooga, Tenn.	Alexander Hollaender, Oak Ridge, Tenn.	Fred Nail, Birmingham
W. O. Brower, Poplar Bluff, Mo.	N. A. Holman, Birmingham	H. C. Powell, Mobile
C. M. Calongne, New Orleans, La.	Ivan Hubbs, Chicago, Ill.	L. V. Rockhill, Birmingham
P. J. Clement, Jr., New Orleans, La.	G. C. Kemp, Jr., Birmingham	F. E. Russey, Birmingham
S. L. Collins, Chattanooga, Tenn.	Boyd Kingan, Mobile	M. L. Shaddix, Jr., Gadsden
Walter Davis, Montgomery	J. H. Knight, New Orleans, La.	E. R. Skinner, Mobile
W. O. Dobbins, Jr., Montgomery	Frank Lais, Jr., New Orleans, La.	J. D. Smith, Birmingham
L. E. Edmondson, Montgomery	Paul Lantrip, Evansville, Ind.	J. E. Stevens, Montgomery
W. J. Feeley, Richmond, Va.	W. F. Laubenthal, Mobile	W. B. Tatum, Mobile
G. B. Findlay, New York City	J. L. Mabry, Birmingham	Rufus Thames, Milton, Fla.
F. L. Fiske, Pascagoula, Miss.	T. L. Mangum, Birmingham	C. H. Waite, Mobile
Garnett Glass, Montgomery	F. R. Mashburn, Roanoke	L. T. Ward, New Orleans, La.
D. W. Gooden, Fairhope	E. E. Matthews, Memphis, Tenn.	P. H. Warren, Richmond, Va.
G. L. Graham, Rochester, N. Y.	H. Mack McCollum, Montgomery	W. H. W. White, Evansville, Ind.
	John McDaird, Mobile	

SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1917	18	64	96	199	32	409	Montgomery
1918	27	63	80	257	44	471	Birmingham
1919	22	43	87	94	102	348	Mobile
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham
1935	15	59	91	180	83	428	Mobile
1936	23	79	95	265	68	530	Montgomery
1937	25	80	96	396	81	678	Birmingham
1938	18	65	78	157	63	381	Mobile
1939	29	79	96	326	84	614	Montgomery
1940	29	77	105	401	229	841	Birmingham
1941	29	66	86	211	91	483	Mobile
1942	33	75	105	249	82	544	Montgomery
1943	31	71	83	321	127	633	Birmingham
1944	33	72	92	214	110	521	Montgomery
1945	Meeting Cancelled						
1946	38	81	87	330	127	663	Birmingham
1947	34	76	91	333	124	658	Birmingham
1948	24	64	87	239	127	541	Mobile

INDEX

THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Volume 17

July 1947-June 1948

EXPLANATORY NOTES

Arrangement of Index

The index is arranged under the following headings:

- I. Authors
- II. Subjects
- III. Editorials
- IV. Transactions of the Association
- V. The Association Forum
- VI. Medical College of Alabama
- VII. Department of Health
- VIII. Book Abstracts and Reviews

I. AUTHORS

B

- Bleidt, L. C.—Complications of sinusitis, with particular emphasis on osteomyelitis of the frontal bone, 337
- Bograd, Nathan, and Peters, G. S.—Scalenus anticus syndrome. A consideration of diagnosis and treatment, 361

C

- Campbell, S. J.—Mesenteric thrombosis. Massive resection of small bowel with recovery, 304

- Carraway, C. N.—The acute abdomen, 258
Casey, A. E.—Evidence of contact spread of poliomyelitis, 365
Clagett, O. T.—Surgical management of gastric and duodenal ulcers, 93
Clark, B. P.—Experiences with Brush's method for the initial stabilization of diabetic children, 137
Crookshank, H. R.—Calibration and use of the photoelectric colorimeter, 226

D

- Donald, C. J., Jr.—Lung abscess, 185
Drennen, Earle, and Kahn, S. A.—Thiouracil and propyl-thiouracil, 1

E

- Efstation, T. D., and Hyslop, Henry—Gynecologic mortality. A clinicopathological analysis of 38 cases, 4

F

- Fisher, G. E., and Hicks, J. J.—An analysis of 435 endoscopic examinations from the bronchoscopic service of the Medical College of Alabama, 344
Freeman, A. M.—Acute postpartal heart failure. A report of four cases with an inquiry into pathogenesis, 163

G

- Garrett, R. M.—Toxicity of DDT for man, 74
Good, C. A.—The importance of follow-up roentgenograms in pulmonary disease, 129
Goodall, R. G.—Hidrosadenitis suppurativa. Report of two chronic cases treated by surgical excision, 159
Gordon, G. R.—Hearing disorders. Study of a new medical therapy, 340
Gould, K. N.—Observations on caudal and intravenous analgesia in obstetrics, 369
Grimes, J. T.—Treatment of Brill's fever, 416

H

- Hardy, J. P., and Toole, A. F.—Arrhenoblastoma. With case report, 125
Henderson, E. A.—A workable concept for the treatment of toxic thyroid, 101

L

- Leese, Joseph—Mental ill-health. Time to immunize, 410
Levy, Tracy, and Watson, J. B.—Paroxysmal hemoglobinuria, 302
Lloyd, W. K.—Caudal analgesia, 233

M

- Matthews, G. W.—Fracture of edentulous mandible. Open reduction and fixation with tantalum wire, 273

N

- Nodine, E. R.—Chronic mastoiditis, 237

P

- Payne, T. J., Jr.—Pregnancy in a rudimentary horn. With case report, 367

- Peake, J. D.—Cancer of the mouth, 183
Pilcher, Cobb—The surgical treatment of essential hypertension, 70
Planck, E. H.—Diagnosis and treatment of Addison's disease, 157

R

- Reque, P. G.—Penicillin, streptomycin and tyrothricin in dermatology, 268
Robinson, E. B.—Present day trends in anesthesiology, 105
Rosser, W. J.—Procedure in diagnosis of anorectal disease, 9

S

- Schwartz, F. F.—Progress of physical medicine and its clinical application, 346
Sharp, W. K., Jr.—The part that the doctors of the State Medical Association have played in the development of public health in Alabama, 153
Simpson, W. C.—Resection of the midthoracic esophagus for carcinoma, 221
Snow, J. S., and London, I. D.—Management of ringworm of the scalp. Present status of the epidemic form in the Birmingham area, 333

T

- Thomas, H. H.—Clinical application of the sex hormones in gynecology, 134

V

- Vance, J. G.—Colostomy, 177

W

- Weil, C. K.—The clinical picture of auricular fibrillation, 405
Weinstein, Albert—The management of hypertension, with particular reference to the surgical treatment, 65
Welch, Oliver, and Porter, Charles—Heart disease in Alabama, 213
Word, Buford—Extraperitoneal cesarean section for the infected case. With a review of cesarean deaths in Jefferson County over a 16-year period 1931-1946, 293

Z

- Zieman, S. A.—The fallacy of the conjoined tendon. The etiology and repair of inguinal hernia, 98

II. SUBJECTS

A

- Abdomen, acute (Carraway) 258
Addison's disease, diagnosis and treatment (Planck) 157
Analgesia in obstetrics, observations on caudal and intravenous (Gould) 369
Anesthesiology, present day trends (Robinson) 105
Anorectal disease, procedure in diagnosis (Rosser) 9
Arrhenoblastoma (Hardy and Toole) 125
Auricular fibrillation, clinical picture (Weil) 405

B

Brill's fever, treatment (Grimes) 416

C

Cancer of the mouth (Peake) 183

Carcinoma, resection of midthoracic esophagus (Simpson) 221

Caudal analgesia (Lloyd) 233

Cesarean section, extraperitoneal, for infected case. Review of cesarean deaths in Jefferson County over a 16-year period, 1931-1946 (Word) 293

Colorimeter, photoelectric (Crookshank) 226

Colostomy (Vance) 177

Conjoined tendon, fallacy of. Etiology and repair of inguinal hernia (Zieman) 98

D

DDT, toxicity for man (Garrett) 74

Diabetic children, experiences with Brush's method for initial stabilization (Clark) 137

E

Endoscopic examinations, 435 from bronchoscopic service of the Medical College of Alabama (Fisher and Hicks) 344

F

Fracture of edentulous mandible (Matthews) 273

G

Gastric and duodenal ulcers, surgical management of (Clagett) 93

Gynecologic mortality. A clinicopathological analysis of 38 cases (Efstation and Hyslop) 4

H

Hearing disorders. Study of new medical therapy (Gordon) 340

Heart disease in Alabama (Welch and Porter) 213

Heart failure, acute postpartal. Report of four cases with inquiry into pathogenesis (Freeman) 163

Hemoglobinuria, paroxysmal (Levy and Watson) 302

Hidrosadenitis suppurativa. Report of two chronic cases treated by surgical excision (Goodall) 159

Hypertension, essential, surgical treatment (Pilcher) 70

Hypertension, management, with particular reference to surgical treatment (Weinstein) 65

L

Lung abscess (Donald) 185

M

Mastoiditis, chronic (Nodine) 237

Mental ill-health. Time to immunize (Leese) 410

Mesenteric thrombosis. Massive resection of small bowel with recovery (Campbell) 304

P

Penicillin, streptomycin and tyrothricin in dermatology (Reque) 268

Physical medicine, progress and clinical application (Schwartz) 346

Poliomyelitis, evidence of contact spread (Casey) 365

Pregnancy in a rudimentary horn, with case report (Payne) 367

Public health in Alabama, part played by doctors of State Medical Association in its development (Sharp) 153

Pulmonary disease, importance of follow-up roentgenograms (Good) 129

R

Ringworm of scalp, management. Present status of epidemic form in Birmingham area (Snow and London) 333

S

Scalenus anticus syndrome. Consideration of diagnosis and treatment (Bograd and Peters) 361

Sex hormones in gynecology, clinical application (Thomas) 134

Sinusitis, complications, with particular emphasis on osteomyelitis of frontal bone (Bleidt) 337

T

Thiouracil and propyl-thiouracil (Drennen and Kahn) 1

Thyroid, toxic, workable concept for treatment (Henderson) 101

III. EDITORIALS

American Academy of General Practice, 279

Anticoagulants, 110

Army Medical Department, education and training activities, 374

Arthritis, rheumatoid, use of gold, 308

Association dues increased, 198

Association officers, 1948-49, 372

Barbiturate law and the physician, 422

BCG vaccination, 373

Blood for medical practice, 309

Cancer in Alabama, 168

Carbon tetrachloride, 238

Cater memorial, 78

Diabetes, vascular damage, 169

Fifty Year Club, 238

German measles and congenital malformations, 375

Good posture, 141

Infections of the urinary tract, treatment, 79

Jaundice following use of pooled plasma, 140

Mass hysteria and atomic bomb explosion, 424

Maternal infections and congenital malformations, 171

National blood program of the American National Red Cross, 111

Nurse situation, 239

Obstetrics in Alabama, 277

Penicillin treatment of scarlet fever, 14

Physician and Alabama's new premarital blood test law, 196

Poliomyelitis, 78

Postgraduate seminar at Mobile, 199

Preventive medicine gets interim specialty board, 352

Rocky Mountain spotted fever, treatment, 79
Scholar in medical science program, 142
Southern Pediatric Seminar, 372
Surgeon General, biography, 352
Thigpen-Cater Eye Hospital dedicated, 200
Van Meter Prize award, 172
Weil's disease, 276

IV. TRANSACTIONS OF THE ASSOCIATION

Committees of the Association, 456
Committee reports, 376
 Accidents and industrial hygiene, 379
 Anesthesiology, 381
 Blindness and deafness, 376
 Cancer control, 384
 Contract practice, 381
 Counsellor distribution, 382
 Maternal and infant welfare, 379
 Medical care and public relations, 386
 Mental hygiene, 378
 Physician-druggist relationships, 381
 Postgraduate study, 383
 Publication, 387
Counsellors of the Association, 451
Fifty Year Club, 397
Officers of the Association, 456
President's Message, 393
Program of the annual session, 312
Registration, 1948 meeting, 457
Report of Secretary-Treasurer, 387
Report of the State Board of Censors, 426
 (1) As a Board of Censors, 426
 On death of Dr. Wilkerson, 426
 On President's Message, 427
 On reports of officers, 427
 On reports of committees, 428
 On Association dues, 430
 On doctors' assistants, 431
 On illegals, 433
 On the Marshall case, 433
 On the Walker-Parsons matter, 433
 On constitutional amendments, 434
 On resolutions, 436
 (2) As a Board of Medical Examiners, 436
 (3) As a Committee of Public Health, 438
Reports of Vice-Presidents, 391
Revision of Rolls, 450
 Of correspondents, 451
 Of counsellors, 450
 Of county societies, 450
 Of officers, 451
Roll of Counsellors, 451
 Alphabetically, 451
 By congressional districts, 452
Schedule, annual sessions and presidents, 454
Schedule, Jerome Cochran lecturers, 455
Secretaries of the Association, 455
Summary of annual attendance, 460
Treasurers of the Association, 455

V. THE ASSOCIATION FORUM

American Medicine's rural health problem
 (Jones) 200
Committee on Medical Care and Public Relations
 (Cannon) 280
The doctor in a changing world (Jordan) 241

VI. MEDICAL COLLEGE OF ALABAMA

Clinicopathological conferences, 244, 281, 317

VII. DEPARTMENT OF HEALTH

A

Alabama's public health program, 115

B

Backache, causes and cure, 398

C

Coliform bacteria in milk, significance of, 118
Compulsory blood-tests for future brides and
 grooms, 250

D

DDT residual house spraying program, 86
DDT residual house spraying in the control of
 house flies, studies of effectiveness, 357
Diseases transmissible to man by food and food
 utensils, 253

I

Infantile paralysis outlook, 353
Influenza danger, 285

L

Lye poisoning, 324

M

Morbidity statistics (current) 20, 86, 146, 174,
 206, 252, 287, 326, 357, 401
Morquio—a great medical benefactor, 144

N

Nursing crisis, causes of, 173

P

Prenatal care for Alabama's mothers, 203
Public health nursing service, birth of, 17

R

Rocky Mountain spotted fever, 83

S

Sanitation, 20 years of organized work in Ala-
 bama, 288
Sanitation work, general trends, 20
Septic tanks, 147
Specimens examined, 19, 86, 117, 146, 206, 252,
 287, 356, 401

T

Typhus fever control program, 175

V

Vital statistics—mortality (provisional) 88, 118,
 149, 175, 205, 253, 288, 327, 356, 404
Vital statistics summary, provisional, 403

W

Water, bacteriologic examination of private sup-
 plies, 401
Water-works, large increase in construction, 206

VIII. BOOK ABSTRACTS AND REVIEWS

A

- Allergy in theory and practice: Cooke, 90
 American illustrated medical dictionary: Dorland, 209
 A. M. A. annual reprint of reports of Council on Pharmacy and Chemistry for 1946, 120
 American Medical Association, history of: Fishbein, 208
 A. M. A. new and nonofficial remedies, 1947, 121

C

- Cardiology, primer of: Burch and Reaser, 329
 Clinical neurology, textbook of: Wechsler, 209
 Clinical therapeutics, manual of: Cutting, 330
 Compleat pediatrician: Davison, 90

D

- Diseases of the chest, with emphasis on x-ray diagnosis: Rubin, 91
 Diseases of metabolism: Duncan, ed., 150
 Diseases of nose, throat and ear: Ballenger, 291

E

- Experiences with folic acid: Spies, 22

G

- Gifford's textbook of ophthalmology: Adler, 328
 Gynecology with a section on female urology: Wharton, 121

H

- Head, neck and trunk, muscles and motor points: Quiring, 120
 Health instruction yearbook, 1947: Byrd, 291

I

- Internal medicine in general practice: McCombs, 210

L

- Laboratory manual of microbiology for nurses: Gill, 209

M

- Medical uses of soap: Halberstadt, et al., 89
 Minor surgery: Christopher, 359

P

- Pharmacology, manual of: Sollmann, 359
 Pharmacology, therapeutics and prescription writing: Bastedo, 328
 Pharmacopeia of the United States of America: U. S. Pharmacopeial Convention, 21
 Practical child guidance and mental hygiene: Kohn, 330
 Practical nurse: Deming, 209
 Principles and practice of obstetrics: DeLee, 88
 Psychotherapy, brief: Frohman and Frohman, 360

R

- Rehabilitation through better nutrition: Spies, 22
 Rush, Benjamin, selected writings: Runes, ed., 292

S

- Sexual behavior in the human male: Kinsey and Martin, 329
 Surgical pathology: Boyd, 120

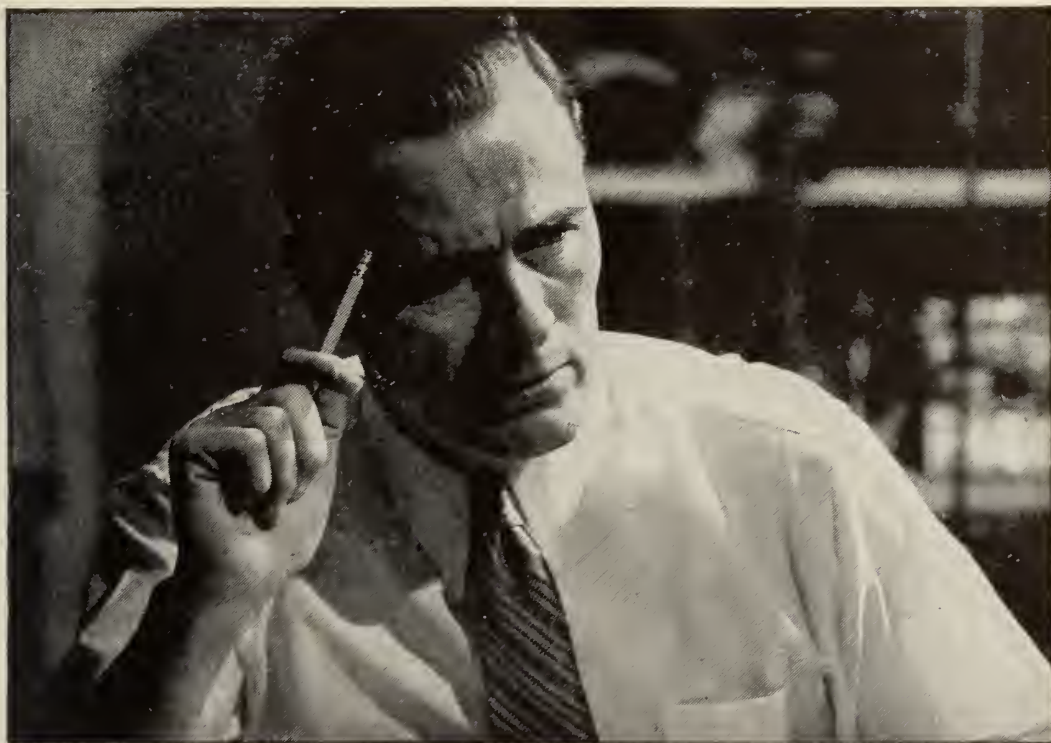
T

- Textbook of medicine: Cecil, ed., 90

Y

- Years after fifty: Johnson, 150

NEXT ANNUAL SESSION OF THE
 ASSOCIATION
 MONTGOMERY
 APRIL 19, 20, 21, 1949



When does a man start slipping?

The moment comes to every man.

The moment when he realizes that he isn't the man he used to be . . .

That the days of his peak earning power are over . . .

That some day not so very far away some younger man will step into his shoes.

When does this time come? It varies with many things.

But of one thing you can be sure. It will come to you as surely as green apples get ripe—and fall off the tree.

Is this something to worry about? Well, yes. But . . . constructively. For *that* can lead you to save money systematically.

What's the best way to do this? By buying U. S. Savings Bonds . . . *automatically*. Through the Payroll Savings Plan. Or the Bond-A-Month Plan at your checking account bank.

Either method is practically foolproof. It's automatic. You don't put it off. There's no "I'll start saving next month"—no "Let's bust the piggy bank."

And you get back four dollars, at maturity, for every three invested.

So why not take this one step now that will make your future so much brighter?

Get on the Payroll Savings Plan—or the Bond-A-Month Plan—today.

Sure saving because it's automatic—U.S. Savings Bonds

*Contributed by this magazine in co-operation
with the Magazine Publishers of America as a public service.*



Ad No. 196-C



THE WALLACE SANITARIUM
MEMPHIS, TENNESSEE

For the Diagnosis and Treatment of Nervous and Mental Diseases
Drug Addiction and Alcoholism

For less than $\frac{3}{4}\phi$ a day . .



*Your Waiting Patients
Can Read*

Hygeia
THE HEALTH MAGAZINE

Hygeia does what you would do if you had the time. . . . in easy-to-read terms, gives the authoritative information on better health practices. Why not make **HYGEIA** available to your patients now?

AMERICAN
MEDICAL
ASSOCIATION
535 N. Dearborn St. Chicago 10

Yes, send me

- ☐ a free copy of **HYGEIA**
☐ a year's subscription, \$2.50 (Bill later)

Dr.
Address.....
City..... State







41A371

